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13 January 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 283

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INDIA

BRIEFS

ANTIPOLLUTION BILL INTRODUCED--New Delhi, Nov. 24. The Government today introduced in the Lok Sabha a Bill to provide for the prevention, control and abatement of air pollution and for the establishment of boards to help carry out this purpose. In the United Nations conference on human environment held in Stockholm, in 1972--in which India participated--a decision was taken to take steps for the preservation of natural resources of the earth which, among other things, include the preservation of natural resources of the earth which, among other things, include the preservation of the quality of air and control of air pollution. This Bill aims to implement this decision as far as India is concerned.--UNI. [Text] [Madras THE HINDU in English 25 Nov 80 p 9]

CSO: 5000

NEW ZEALAND

DOW CHEMICAL OFFICER STRESSES PUBLIC RELATIONS NEED

Wellington THE EVENING POST in English 25 Nov 80 p 15

/Text/ Companies involved in health and environmental fields should step up their public relations and scientists, particularly, should become involved, according to a representative of the Dow Chemical Company, Dr E H Blair.

Dr Etcyl Blair is vice-president and director of health and environmental sciences for the company in the United States. He is on a brief visit to New Zealand and last night addressed the New Zealand Institute of Agricultural Sciences and the Royal Society.

Scientists should get out of their laboratory coats to help combat excessive regulations in the fields.

"Credibility is our currency. It is the only way we can meet the future," he said.

The Dow Company had taken a strong position and spoken out about 2,4,5-T and in the carcinogenic area, he said. A year ago the chairman of the company had stressed that there should be more involvement with Government.

If those who understood such subjects did not become involved, then the Government could make serious mistakes by making regulations without understanding all the factors involved.

The key laws in the United States relating to agricultural chemicals were on pesticides, air, water and drinking water, which came under the Environmental Protection Agency. Laws relating to drugs and packaging materials were under the Food and Drug Administration.

The cost of administering the regulations was $1.7 billion. More than $5 billion was spent on research aspects in these areas.

In the 80s, environmental control expenditure would continue, testing and possibly banning of chemicals would increase, more information would be collected and made publicly available. There would also be more information available to assess hazards, firms would become more selective of product choices.

He commented that in the United States, radical encircumentalists and "Naderites" were carrying out an active programme, which was also highly political to bring about regulations.

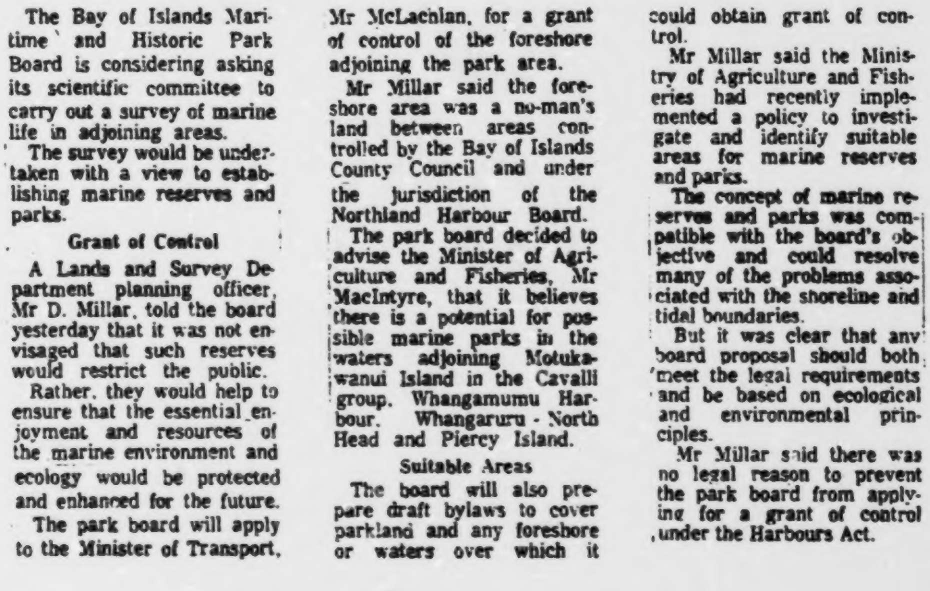
Mr Nader had become totally arrogant and inflexible said Dr Blair. The courts were beginning to realise that Nader spoke for Nader and nobody else.

CSO: 5000

ESTABLISHMENT OF MARINE RESERVES, PARKS WEIGHED

Auckland THE NEW ZEALAND HERALD in English 26 Nov 80 p 2

/Text/ Kaikohe (HERALD correspondent)--The setting-up of marine reserves and parks in the north may be looked into.



The Bay of Islands Maritime and Historic Park Board is considering asking its scientific committee to carry out a survey of marine life in adjoining areas.

The survey would be undertaken with a view to establishing marine reserves and parks.

Grant of Control

A Lands and Survey Department planning officer, Mr D. Millar, told the board yesterday that it was not envisaged that such reserves would restrict the public.

Rather, they would help to ensure that the essential enjoyment and resources of the marine environment and ecology would be protected and enhanced for the future.

The park board will apply to the Minister of Transport, Mr McLachlan, for a grant of control of the foreshore adjoining the park area.

Mr Millar said the foreshore area was a no-man's land between areas controlled by the Bay of Islands County Council and under the jurisdiction of the Northland Harbour Board.

The park board decided to advise the Minister of Agriculture and Fisheries, Mr MacIntyre, that it believes there is a potential for possible marine parks in the waters adjoining Motukawanui Island in the Cavalli group, Whangamumu Harbour, Whangaruru - North Head and Piercy Island.

Suitable Areas

The board will also prepare draft bylaws to cover parkland and any foreshore or waters over which it could obtain grant of control.

Mr Millar said the Ministry of Agriculture and Fisheries had recently implemented a policy to investigate and identify suitable areas for marine reserves and parks.

The concept of marine reserves and parks was compatible with the board's objective and could resolve many of the problems associated with the shoreline and tidal boundaries.

But it was clear that any board proposal should both meet the legal requirements and be based on ecological and environmental principles.

Mr Millar said there was no legal reason to prevent the park board from applying for a grant of control under the Harbours Act.

CSO: 5000

PROPOSED METHANOL PLANT FAILS ENVIRONMENTAL TEST

Auckland THE NEW ZEALAND HERALD in English 27 Nov 80 p 5

/Text/ Wellington (Press Association)--The Commission for the Environment considers the present Petralgas proposal to establish a methanol plant in the Waitara Valley does not meet the environmental standards required for that location.

But it says in its audit of the combined Petrocorp-Alberta Gas Chemicals of Canada project, that the proposal does not present unmanageable environmental problems, with one possible exception—the interference of the plant's flare with the aircraft instrument approach to New Plymouth Airport.

In its own environmental impact report, Petralgas said said the $140 million plant, which will produce 1200 tonnes of methanol a day, would have little adverse impact on the Taranaki countryside surrounding the site.

However, the Commission for the Environment says Petralgas has summarily dismissed many areas of environmental concern as being of little note and has failed to consult local people sufficiently.

It calls for a Petralgas commitment to design and run the plant in a manner which will enhance rather than detract from the environmental quality of the area.

The commission says the company has failed to recognise the full implications of its project on the rich Taranaki farming landscape through its demand for land and water—resources traditionally available solely for agricultural production.

And it says Petralgas must also recognise that industrial effluents from the methanol plant must be disposed of in a manner acceptable to local authorities, communities and farmers.

It must also consider the full implications of off-site development associated with the plant, especially the pipeline and the requirement for near-wharf methanol storage.

The commission directs much of its criticism of the proposal at Petralgas' use of Albert Gas' experience at its Medicine Hat plant in Canada as a basis in planning.

It says the company has not sufficiently appreciated the climatic contrast between Waitara's mild year-round weather and the widely varying Alberta conditions.

Petralgas has also inadequately grasped that its proposal is the first stage of gas-based petrochemical industry near Waitara, while the Medicine Hat plant was an extension to a large existing petrochemical development.

The commission considers many of the environmental issues require action by a strong and functional regional planning body.

But it says the Taranaki United Council does not have the resources to vet industrial proposals in the light of regional planning goals.

In sum, it says the environmental problems thrown up by the Petralgas plan are all capable of economic and technical solution, but require a commitment by the company to modify its proposal.

Overview

It makes a total of 32 recommendations which it says will, if accepted by Petralgas, satisfy the environmental needs of the plant.

The commission recommends that the united council should play a leading part in the environmental planning and monitoring of the proposal, and provide a regional overview.

It suggests the council should co-ordinate with Government and local agencies, and the company, to limit social disruption and get the most from benefits from the construction of the plant.

It should also establish, with the Health Department, a site for the disposal of hazardous and toxic industrial wastes from the plant.

So the council can carry out these tasks, the commission recommends that the Government should improve its staffing and funding.

Disclose

The Petralgas project is the first to be audited by the commission under the National Development Act, and it directs its recommendations towards Government departments and local authorities that will have the opportunity to advise the National Development Tribunal—the body that will inquire into the project.

The commission recommends that before the tribunal hearing, Petralgas should disclose in a public statement the progress it has made in meeting the audit's recommendations.

The statement should centre on whether the Ministry of Transport considers the flare from the plant on the approach to New Plymouth airport a major site constraint, and the result of a company investigation into a system to remove harmful chemicals from the water effluents in order to avoid direct discharge to the Waitara River or the ocean.

In regard to the specific operation of the methanol plant, the commission recommends that Petralgas reconsiders the design of the distillation relief system to lessen the amount of methanol discharged to the atmosphere.

Disturbance

It says the company should also prepare detailed plans on how a methanol spillage at the site's storage facility could be controlled.

Further study is also called for on the effects of various concentrations of methanol on plant life and animals. The commission suggests Federated Farmers should be consulted on the timing of the plant's operation to cause the least disturbance to dairy herd milking.

The Petralgas general manager, Mr R. J. Hogg, described the audit as a "positive, comprehensive report which will be studied most carefully."

He said the recommendations addressed to Petralgas "have either been acted upon already through discussion with the members of the public or statutory bodies concerned prior to the publication of the audit, or are at present under consideration."

Mr Hogg added: "Petralgas has made available very full reports concerning its proposal, and will continue to support an open approach on environmental matters that give rise to concern."

CSO: 5000

CONSERVATION GROUPS SEEK FOREST, PLANT PROTECTION

Wellington THE EVENING POST in English 28 Nov 80 p 2

/Text/

THE proposed Town and Country Planning Amendment Bill 1980 should be extended to provide protection for native forest and plant communities and wetland areas, according to major conservation groups.

The Royal Forest and Bird Society, the Native Forests Action Council, and the Environment and Conservation Organisations of New Zealand have made submissions on the Bill to the Lands and Agriculture Select Committee at Parliament.

They all submitted that a clause relating to the preservation of indigenous forests and plant communities and wetlands and the protection of them from unnecessary exploitation and development be added to the list of matters of national importance in all planning.

"The proposed addition to the list of matters of national importance will offer a clear indication to planning authorities, tribunals and government departments," that protection of these habitats should be given greater weight in the planning process," the Native Forests Action Council (NFAC) said.

The Environment and Conservation Organisations (ECO) said the addition would provide statutory safeguards that would delay logging or clearance of any private-owned forest until its conservation significance had been evaluated.

The Royal Forest and Bird Society said private forested areas did not enjoy the protection afforded by the Government's Indigenous Forest Policy that protects state-owned forests.

The NFAC, ECO and the Environmental Defence Society opposed the clause of the Bill which does away with the requirement for local authorities to publish in summary form objections to district planning schemes.

This, they said, would be a backward step that would hamper public participation in planning.

ECO also submitted that a new clause be incorporated into the Bill providing for all proposed mining and prospecting activities to undergo the full change-of-use procedure.

Mining activities as defined should be required to be accompanied by an environmental impact report.

CSO: 5000

BILL SEEKS INCREASED PENALTIES FOR RIVER POLLUTION

Opposition Party Proposal

Wellington THE EVENING POST in English 28 Nov 80 p 3

/Text/ The Labour Opposition yesterday succeeded in introducing into Parliament a Bill to increase substantially the penalties for polluting streams and rivers.

The Government did not block the introduction of the Water and Soil Conservation Amendment Bill which was drafted and introduced by Lyttelton MP Mrs Ann Hercus — the third Bill she has introduced this session.

But National MPs spoke out against the measure, which they regarded as unnecessary, and would not allow it to go to a parliamentary select committee for more detailed study.

Introducing the Bill, Mrs Hercus said its major clause, clause two, provided for the existing penalty provisions in the Water and Soil Conservation Act to be substantially increased — by a staggering 1150 percent — from the maximum penalty of $2000 to $25,000.

Another clause made adjustments to penalties for offences against the trade waste bylaws contained in the Local Government Act.

These penalties should go from the present maximum of $1000 to $5000, Mrs Hercus said.

"It is no exaggeration to say that every New Zealand river on which a town or city is situated has a pollution problem of some degree — and in some cases, regular, consistent and highly damaging pollution, "the Christchurch MP said, using the Heathcote and Avon Rivers as examples.

She was aware that the Water and Soil Conservation Act and other associated legislation was under review but this was well overdue and the issue of increasing penalties could be dealt with separately.

The present level of penalties, Mrs Hercus said, was clearly just not sufficient to inhibit polluters.

Education

But the Minister of Works and Development (Mr Bill Young) described the proposal as a piecemeal measure which would not solve a problem for which education was the answer.

"It is a piecemeal approach to a major problem and that problem will be tackled when the revised Act comes before the House," the Minister said.

In addition, the measure would not cover oil discharges which were covered by the Marine Pollution Act of 1977.

Western Hutt MP Mr John Terris (Labour) spoke out strongly for the Bill.

Pointing to the polluted Waiwhetu Stream in the Hutt Valley, Mr Terris said one of the most effective ways of educating the public was to provide specific penalties, increased where appropriate.

Carpet

He had seen floating in the Waiwhetu Stream an old carpet, and a discarded plastic lid, and believed that example of an extinct waterway — "a stinking mess" — was due to Government inaction.

Although it allowed the Bill to be introduced, the Government voted against it being referred to a select committee for further study. It has been set down for second reading.

Passage Seen Unlikely

Christchurch THE PRESS in English 29 Nov 80 p 12

[Report by Parliamentary reporter]

[Text] An attempt by the member of Parliament for Lyttelton (Mrs Ann Hercus) to bring about higher penalties for pollution of streams and rivers was only partly successful on Thursday.

She successfully introduced the Water and Soil Conservation Bill but failed to have it referred to a select committee. Accordingly, although the bill has been put at the bottom of the Order Paper for a second reading, this is unlikely to happen before the end of the session and the bill will probably lapse.

The main effect of the bill would be to increase the fine for pollution of waterways from the existing maximum of $2000 to a new maximum of $25,000. It would also make a similar adjustment to the penalties for offences against trade waste by-laws (contained in the Local Government Act) from the present maximum fine of $1000 to $5000.

Introducing the bill, Mrs Hercus said pollution of water had increased dramatically.

"It is no exaggeration to say that every New Zealand river on which a town or city is situated has a pollution problem of some degree, and in some instances regular, consistent, and highly damaging pollution," she said.

The review of the act and associated legislation which was now underway was taking a long time without producing anything, she said.

"We have waited patiently for more than a year, and there is still nothing. We can wait no longer. The issue of increasing penalties stands alone and does not affect or impinge on other areas of possible reform in this area."

Mrs Hercus said that existing penalties, and the level of fines imposed, were "clearly just not sufficient to inhibit polluters, particularly those who regularly pollute our rivers and streams."

Using Christchurch's problems as an example, Mrs Hercus gave a sample list covering 16 months of pollution incidents in the Avon River and Heathcote River:

February, 1978: oil leaks into the Avon.

April, 1978: chemical leaks into the Avon and the Wairarapa Stream, during which hundreds of trout died.

July, 1978: oil leaks into the Avon.

August, 1978: oil leaks into the Heathcote; hundreds of ducks die.

September, 1978: oil leaks into the Heathcote.

September, 1978: creosote leaks into the Heathcote.

October, 1978: diesel leaks into the Avon.

December, 1978, tar substance from a brewery escapes into the Avon.

January, 1979: tar escapes into the Heathcote.

March, 1979: oil leaks into the Avon.

May, 1979, 12,000 litres of oil escapes into the Heathcote, killing hundreds of ducks and other wildlife.

"Some of the polluters are consistent offenders. The Christchurch Gas Company is up to its eleventh or twelfth conviction," said Mrs Hercus.

"The damage done is often irreversible. The nub of my argument is that a fine of $300 or $400, which seems to be the average level imposed after successful prosecution, is clearly just not a realistic and successful deterrent.

"That sort of fine is clearly regarded as 'peanuts', and polluters just go on, polluting and paying peanuts," she said.

CSO: 5000

PARKS BILL TERMED LICENSE FOR OPEN-CAST MINING

Wellington THE EVENING POST in English 28 Nov 80 p 3

/Text/ The National Parks Bill was nothing more than a fast track for open-cast mining development, Labour claimed in Parliament last night.

The allegation came from Auckland Central MP Mr Richard Prebble (Labour) during a more than six-hour debate in committee of the much disputed Bill.

Debate last night was a stark contrast to the Bill's uneventful second reading in the House at approximately midnight on mini-Budget night, Tuesday.

Examination of legislation in committee enables Parliament to take a detailed look at each clause, and this is pretty well exactly what the Labour Opposition forced the Government to do last night.

In general, the Opposition party is dissatisfied with the substantial changes the Government has already made to the Bill, which has attracted widespread criticism from national park users and others.

Particular clauses the Opposition fought unsuccessfully in the House last night to have changed were:

- Clause 14 providing "amenities areas" within parks for public use.
- Clause 16 governing the constitution of the National Parks and Reserves Authority.
- Clause 30 covering the membership of the National Parks Boards.
- Clause 41 setting out that the Department of Lands and Survey is to manage and control national parks.

Labour backbencher Mr Richard Prebble claimed that the basic purpose of the Bill was for the Government to gain control of the National Parks but that no good reason had been given for this.

"This Bill is nothing more than a fast track for mining development," he said.

Open-cast mining in the parks was a very real possibility and if Labour had taken the step in Government it would have been labelled as "arrogant socialism," Mr Prebble said.

Criticising the extent of the department's powers as set out in the Bill, Christchurch Central MP Mr Geoff Palmer asked why there was a need for centralisation of such a power in Wellington.

"These national parks boards will remain effectively under the thumb of the department," he said.

But, Lands Minister Mr Venn Young countered with the statement that: "The heavy hand of Government won't come down on a national parks authority which doesn't accede to the Government's request on the appointment of members."

On the mining question, the Minister said the rights to mine in national parks would remain exactly as they are under the present legislation.

He reasserted that the principle of the Bill was to integrate administration of national parks, linking them where necessary throughout the country.

The legislation was also intended to avoid unnecessary duplication of effort by the boards and the department.

The Bill passed its committee stages with amendment at 11.20pm.

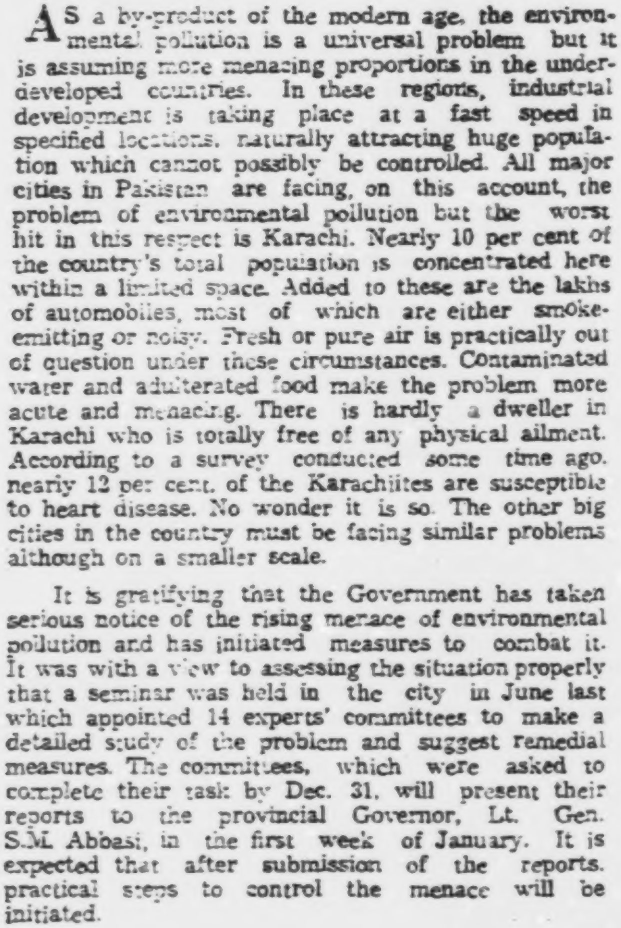
CSO: 5000

ELIMINATION OF POLLUTION URGED

Karachi MORNING NEWS in English 16 Dec 80 p 4

[Editorial]

[Text]



AS a by-product of the modern age, the environmental pollution is a universal problem but it is assuming more menacing proportions in the underdeveloped countries. In these regions, industrial development is taking place at a fast speed in specified locations, naturally attracting huge population which cannot possibly be controlled. All major cities in Pakistan are facing, on this account, the problem of environmental pollution but the worst hit in this respect is Karachi. Nearly 10 per cent of the country's total population is concentrated here within a limited space. Added to these are the lakhs of automobiles, most of which are either smoke-emitting or noisy. Fresh or pure air is practically out of question under these circumstances. Contaminated water and adulterated food make the problem more acute and menacing. There is hardly a dweller in Karachi who is totally free of any physical ailment. According to a survey conducted some time ago, nearly 12 per cent. of the Karachiites are susceptible to heart disease. No wonder it is so. The other big cities in the country must be facing similar problems although on a smaller scale.

It is gratifying that the Government has taken serious notice of the rising menace of environmental pollution and has initiated measures to combat it. It was with a view to assessing the situation properly that a seminar was held in the city in June last which appointed 14 experts' committees to make a detailed study of the problem and suggest remedial measures. The committees, which were asked to complete their task by Dec. 31, will present their reports to the provincial Governor, Lt. Gen. S.M. Abbasi, in the first week of January. It is expected that after submission of the reports, practical steps to control the menace will be initiated.

Among other things, the committees were asked to prepare action programmes relating to waste water and its recycling, industrial and maritime pollution, garbage disposal, drinking water supply, pollution due to use of asbestos pipelines, public health hazards, education on environment etc.

It is for the first time that serious efforts are being made to assess the magnitude of pollution through various sources. The suggestions of experts is keenly awaited by every body, as it concerns directly the physical and mental happiness of all of them. Nobody in Karachi is 100 per cent fit, and for no fault of his own. He does not have pure air to breathe, pure water to drink and pure food to eat. It is a dismal picture indeed. Our forefathers might look primitive by our standards of living, and the thousand-and-one "good things" of life we now enjoy, but they were luckier in many respects. They at least had pure things to breathe, drink and eat. Being nearer to the "state of nature", they actually partook something of the virility of Nature itself. The host of diseases afflicting mankind in our modern and civilised age were practically unknown then.

It would be pertinent to mention here that a lamentable lack of civic sense among the people is partly responsible for the pollution. It is specially so in Karachi. Most of the smoke-emitting vehicles belong to private corporations or individuals who do not care to get them repaired because they can get away with their lapse. Apart from this, there is the general habit of throwing dirt and garbage outside the houses or wherever they find a space to dump it. Spitting and easing themselves at wrong places is yet another bad habit which gives the city a shabby and filthy look and contributes to the general mass of pollution.

The elimination, or even partial control of the pollution, will bring about a qualitative change in life in the urban areas in the country. With all the fumes from the automobiles, the bacterial and chemical infection due to dirt and filth in the city and the contaminated water, the situation in Karachi is something akin to slow poisoning. What it means in terms of physical and mental health, to live in a pure atmosphere can be appreciated by having a look at the sturdy physique and cheerful outlook on life of rural dwellers who breathe fresh air, eat pure things and drink sweet and uncontaminated water. Compared to them, the poor city dweller is but a sick man.

It must be pointed out here that not all the environmental problems are that difficult to control. The air pollution is largely the result of smoke-emitting vehicles which can be easily controlled just by enforcing the relevant traffic and vehicular laws that are already there and need simply to be enforced. Similarly, if the municipal corporations did their job of looking after sanitation properly, another major source of pollution would have been removed. Contamination of water can be removed if the concerned authorities take care to do their job efficiently and honestly. Indeed, with a tight administration, half the battle will have been won. Experts should be left to take care of the rest.

The problem of solid waste from the industries and residential areas is a permanent and difficult phenomenon to tackle and it will require a comprehensive plan. The suggestions made by the relevant committee in this connection are not yet known but we are sure the measures adopted in other parts of the world, similarly situated, will have been taken into consideration by the experts. Steps recommended are awaited with interest.

CSO: 5000

CHEMICAL POLLUTION OF ENVIRONMENT ANALYZED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 5, 1980 pp 1-4

[Article by Qu Geping [2575 2706 1627]: "Major Impending International Environmental Questions--Poisonous Chemical Products in the Environment"; first of a series]

> [Excerpts] Editors' Note: Environmental pollution and damage are one of the greatest challenges now facing mankind. Many environmental questions transcend one area or one country, have become world problems, have attracted great attention from world public opinion, and have become important topics of discussion by international organizations. What are these critical international environmental problems? This journal requested former Chinese permanent representative to the United Nations Environmental Planning Office Comrade Qu Geping to contribute an article giving an introduction to some of these circumstances; this will be printed as a series for our readers.

The food and drink of this country's urban and rural inhabitants is mostly produced by households; the foodstuffs industry is still insufficiently developed and the quantities of additives included in food and absorbed by people are still small. However, during 10 catastrophic years, because of breakdowns of management and control, certain problems arose in the production and use of chemical food additives. On the basis of incomplete statistics from 1974, 267 chemical food additives were used in 500 foodstuffs, including many cases of abuse. For example, some non-food-use dyes were used as food colorings, in some cases ammonium sulfate agricultural fertilizer was actually used to prepare red-brown food coloring, and some poisonous microorganisms caused great harm to health; some forbidden chemical additives came into use, as for example rongalite, which has caused great harm to health, and has long been forbidden, but which in some cases has come back into use; in some cases quantities used exceeded standards by several times, several dozen times or even more than 100 times. In addition, foodstuffs were contaminated with agricultural pesticides, industrial wastes, mold, heavy metals, epidemic diseases of domestic animals and pollutants from processing, transport and packaging, as well as contaminants carried by imported foodstuffs. In order to improve this chaotic state of affairs, in 1974 the state set up the National Food Hygiene Leadership Group, which in turn set up offices and issued a series of regulations to prevent contamination of foodstuffs. In particular, in 1979 the

State Council issued the "People's Republic of China Food Hygiene Management Regulations," which further improved the system and the laws and regulations pertaining to this country's foodstuff hygiene work. In recent years, under the leadership of the National Food Hygiene Leadership Group, and through the efforts of the relevant departments and localities, great changes have occurred in the status of our country's food hygiene. However, as the food industry develops and the people's mode of life improves, the quantities of food additives may increase constantly, and accordingly intensified management and control of the dangers involved should be put on the agenda.

Our country has just begun to use the factory method of livestock raising, and the quantities of chemical medications are still limited. But as our livestock factories go into larger-scale production, veterinary medications and chemical feed additives will be used in increasing quantities, and the question of how to control their dangers should become another new environmental topic. The large-scale use of chemical fertilizers has had a major effect in producing large increases in food stuff output. But at the same time, certain associated environmental questions have arisen.

At present, more than 100 million metric tons of agricultural fertilizer are used worldwide every year. The use of chemical fertilizers has resulted in changes in the physical properties of soil, has decreased fertility and has polluted or negatively affected the quality of agricultural products. The nitrates formed in the soil when ammonia fertilizers are used are absorbed by plants, can enter the human body, can lead to hemoglobin disorders and can produce the carcinogenic nitrosamines. The quantities of chemical fertilizer absorbed by crops are very small, while most of it is carried by rain and percolation into streams, lakes and the oceans, resulting in nutrient pollution of water bodies. In addition, the large quantities of nitrogen oxides produced by the decomposition of nitrogen fertilizers are thought to be an important factor in breaking down the density of the ozone layer; a decrease in the density of the ozone layer can lead to an increase in human skin cancer.

The amounts of chemical fertilizer which we apply are in general too high. In some cases they are used in combination with farmyard manure, which does not produce any visible environmental damage. However, problems have appeared in certain areas; these include especially: (1) Waste. If every year we use 30 million tons of chemical nitrogen fertilizer, the quantity actually absorbed by the plants is less than 13.5 million tons, and 16.5 million tons is lost by volatilization, washing away on or below the surface, or nitrification or denitrification, becoming factors harmful to the environment in particularly large quantities. (2) Large-scale application of nitrogen fertilizers has resulted in an imbalance between nitrogen, phosphorus and potassium, so that the physical and chemical characteristics of the soil are degraded. It has been reported that the nitrogen content of the soil in the Taihu Lake area is 1,500 parts per million, while the immediately available potassium content is generally about 70 ppm and that of immediately available phosphorus less than 10 ppm. Crops absorb the nutrients nitrogen, potassium and phosphorus in a certain proportion, and if one of them is in insufficient supply, certain symptoms will appear during growth, damage by harmful insects will be increased and production will suffer. (3) Rural fuel is in very short supply, and large quantities of stalks have been burned; since they have not been returned to the fields, the organic matter content of the soil has decreased, and large sources of fertilizer have been wasted. The nitrogen content of the stalks is about 0.5 percent, the phosphorus content about 0.2 percent and the potassium content about 1.4 percent. If every year 500 million tons of stalks are burned, this results in the burning of 2.5 million tons of nitrogen, equivalent to 12.5 million tons of ammonium sulfate and 1 million tons of phosphorus, equivalent to 5 million tons of calcium pholphate. If potassium is returned to the fields in the ashes, it will not be lost. The nitrogen burned becomes nitrogen oxides, and the phosphorus becomes phosphorus pentoxide, both of which are air pollutants.

Of the heavy metals, cadmium, mercury and lead are the pollutants which cause the most extensive harm and are the most poisonous. A typical form of chronic cadmium poisoning is "bone ache disease," in addition to which it can also lead to lung and kidney disease, so that it presents a great threat to health. In certain regions of this country, the cadmium content of the soil and of paddy rice is increasing; a striking example is the Zhangshi Irrigation Canal. In rice paddies which have been irrigated with cadmium-containing wastewater, the paddy rice cadmium content in severely polluted sections averages 1.09 mg/kg, while in sections of moderate pollution it is 0.48 mg/kg and in sections with mild pollution 0.19 mg/kg. This pollution is serious, but no data on the effects on human health have yet appeared, possibly because of the short time period involved, or because the accumulations may not have yet reached a disease-causing level, or because the cadmium-containing rice may be eaten mixed with noncontamined rice, resulting in dilution, or because cadmium contamination disease symptoms already exist and have not been discovered or have not been generally recognized.

Owing to the fact that in recent years nonmercury-containing instruments have been used, the quantity of mercury discharged in this country has been decreased. But because the amount consumed in industry is high, and it has been discharged and has accumulated over many years, mercury pollution has not been alleviated. In particular, the mercury pollution in Songhuajiang River No 2 is particularly grave; the mercury content of fish averages 0.74 mg/kg, so that the mercury levels in fishermen have already reached the lower limit of those found in poisoning victims in Minamata, Japan. There is still disagreement about the health hazard posed by mercury: one opinion holds that chronic latent methylmercury poisoning (suspected Minamata disease) has already occurred; another opinion holds that it is still only chronic latent methylmercury "effects." It appears that everyone admits that harm has occurred, and the difference of opinion concerns only the degree of harm.

Although there is a wide variety of chemical products with a far-flung range of uses, it is only necessary to set up a registration system, issue regulations and standards, and carry out strict management in order to be able to control their possible environmental effects. Poisonous chemicals registration and management work in this country has been entrusted by the government to the "poisonous chemicals recording stations" of the Institute of Public Health of the Academy of Medical Sciences, which will undertake the heavy responsibility of managing poisonous chemical products in order to make a contribution to environmental protection.

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BEIJING INDUSTRIAL DEVELOPMENT DISCUSSED IN TERMS OF POLLUTION

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 5, 1980 pp 5-7, 11

[Article by Zhu Zuxi [2612 4371 1585]: "A Discussion of the Development of Beijing's Industry in Terms of the Current State of Environmental Pollution"]

[Text] In the 1950's, when the effects of environmental pollution were continually making themselves felt in some industrially developed capitalist countries, Beijing still maintained pure, fresh air, pure water sources, and quiet surrounding. Foreign friends who traveled here all praised and admired Beijing's excellent environment. But as time passed, Beijing's environmental quality has continually deteriorated. The air has become hazy and dusty, the city has overflowed with polluted water and the noise of vehicles has become clamorous. Foreign friends who came to Beijing have constantly made unfavorable comments. Some of them have said: "I have visited dozens of cities throughout the world, including Third World cities, and I have never seen a city so seriously polluted as Beijing."

The inhabitants of Beijing also made many complaints about this situation and requested that the "three wastes" be disposed of and the environment improved.

1. In the last 30 years Beijing has developed from a city with very little modern industry into a metropolis with fully developed industrial sectors as metallurgy, machine building, chemical engineering, light industry and textiles, building materials and electrical instruments.

But the rapid development of industry and the sharp increase in population have brought Beijing a number of problems: housing is scarce, traffic is congested and the city's environment is daily deteriorating, particularly as a result of air pollution, water resource pollution and noise pollution and can be said to have reached an extremely grave level. Currently every year the burning of coal in Beijing emits as much as 500,000 tons of sulfur dioxide and ash into the atmosphere, and particularly during the heating season the city is full of smoke. If you look at it from Xishan hill in the suburbs, the entire city is covered by a gray cloud of smoke. According to readings by the relevant departments, the SO_2 content of air in the urban area constantly exceeds state standards severalfold, and the content of 3,4-benzpyrene is several times or several dozen times as high as in clean comparison areas, and the average quantity of dust deposited is generally several times higher than in the reference areas. But fuel consumption in Beijing is still increasing rapidly. Some people believe that if radical policies and treatment measures are not adopted in the next few years, fog situations comparable to those in London could occur in Beijing.

Harmful waste gases in the atmosphere not only harm the people's physical and mental health, but also harm our cultural heritage. It has been reported that the white marble reliefs and copper lions and turtles exposed to the elements in the Imperial Palace and Imperial Ancestral Temple have already been corroded by acid fog, and the contours of the reliefs are becoming less and less distinct.

Beijing's subsurface water resources have already been excessively exploited, and for many years the subterranean water table has been dropping constantly in the nearby suburbs and industrial areas, while its hardness has been constantly on the rise. The area in which underground water resources have hardness exceeding state standards is already several hundred square kilometers, while the main drinking water sources in the urban area have been rapidly deteriorating and water quality declining year after year. Some people estimate that if the situation continues, by the year 2000 Beijing will experience a serious water shortage. Not only that, but Beijing's subsurface water sources are also being polluted by the three wastes. At present every day nearly 2 million tons of wastewater that has not been effectively treated is discharged into the environment, and many surface water courses have already become froth-covered, polluted, stinking "dead streams" where fish and aquatic life have disappeared. Some people say that in the early 1950's Beijing built one Longxu Ditch, but now there are dozens of Longxu ditches. In the last few years, many water wells have had to be closed up because of pollution, and environmental pollution incidents have occurred from time to time; it is roughly estimated that every year the total economic loss resulting from pollution problems amounts to several hundred million yuan.

Beijing's noise pollution is also rather serious. It is generally believed that the noise level should be less than 30-50 decibels when people are sleeping, and when they are working, conversing or thinking it should be between 45 and 60 decibels. But on the main traffic arteries inside the city the noise level is as high as 75 dB (it is 58 in Tokyo), and in many scientific research organizations, office buildings, conference halls, schools and residential districts near these arteries it is impossible to work, study or rest properly owing to the serious disturbance. Even the birds cannot stand the polluted environment and the roar of noise: birds have almost disappeared inside the city.

Such circumstances are extremely unsuitable for Beijing, the capital of socialist China.

2. The factors producing this grave environmental situation are varied, but we believe that the main ones are as follows:

A. Too wide a variety of industrial development, with an excessive predominance of heavy industry.

It has been clear from the day on which New China was founded that Beijing is the capital of our country and the country's political center. But Beijing's economic function, i.e. its economic position in the country as a whole and in North China, has never been made entirely clear; only the general suggestion to "make a consumer city into a producer city" has been made. As regards industrial development, a one-sided stress was laid on "taking heavy industry as the foundation," and at the end of the 1950's it was also proposed that a complete industrial system with a fully developed complement of such sectors as metallurgy, machine building, chemical engineering, coal, textiles and precision instruments be created.

Examining industrial investment over the last 30 years as a whole, we can see that heavy industry has accounted for about 90 percent. In the early 1970's it actually accounted for more than 95 percent. In terms of total industrial output value, heavy industry's contribution of 64.5 percent exceeds the figures for both Shanghai and Tianjin and is second only to that for our country's heavy industrial city, Shenyang.

Heavy industry, and particularly metallurgy and chemical engineering, not only take up large amounts of space and consume much energy and water, but in addition are also serious polluters of the environment. Of the coal consumed every year in Beijing City, the Shougang steel works, the Yanshan Petrochemical Corporation, the coking plant and the power plant account for more than half. Of all the water used in Beijing, industrial-use water accounts for 81 percent, and the metallurgical, chemical engineering and electrical power departments account for more than half of industrial-use water citywide. For every 10,000 yuan of output value, energy consumption is 0.2-2.7 tons (of standard coal) for light industry and 20-50 tons for heavy industry; water consumption is 300 tons for light industry and 1,000 tons for heavy industry.

This state of affairs not only puts the proportionality between light and heavy industry out of balance, but also has brought a series of problems such as air pollution, water sources pollution, excessive exploitation of subsurface water, and a scarcity of transport to Beijing, which lacks energy resources and water resources in the first place.

B. Placement of industry is insufficiently rational.

Since Liberation, Beijing has created 10 industrial districts, including the 2 banks of the Tonghui River, the eastern suburbs, the southern suburgs, Shijingshan, Jiuxianqiao and Shihua. However, several plants which take up large areas, consume large quantities of energy and water and are serious polluters have been located in districts which are not far from the center of the city. The near suburbs of Beijing account for only a few percent of the total area of the city, but 80 percent of industry is concentrated in them. This is the main factor producing atmospheric pollution and excessive subsurface water resource utilization in the city.

According to statistics from the relevant departments, every year the actual quantity of water utilized in Beijing's nearby suburbs exceeds 50 percent of the total amount that can be extracted. On the average, in certain industrial areas in the eastern suburbs there is an average of 23 wells per square kilometer, twice as high as the normal figure, resulting in a rapid drop in the water table. Subsurface water subsidence funnels have already formed over an area of several hundred square kilometers, and surface subsidence has also occurred.

Observations indicate that both in high summer and in early autumn, and both day and night, the air temperature in Beijing city is generally 1-2° higher than in the suburbs; this is the so-called "heat island effect" in climate. When the heat islands reach a certain strength, centripetal air vortices may begin to flow toward the city from all directions, and the smoke and ash emitted by plants located in the nearby suburbs can be concentrated in the center of the city by the vortex winds, making air pollution in the city even more serious.

Some chemical plants are located in areas where subsurface water resources are plentiful or in the cultural and educational districts, and some of them alternate with residential districts, so that some of these areas suffer serious environmental pollution.

C. Too-rapid growth of urban population..

In the last 30 years, the population of Beijing City has increased from 1.6 million to a current 5 million, and the population density is as high as 14,700 [per square kilometer], higher than in Paris, London or Moscow. One important reason for the rapid increase in Beijing's urban population is excessively fast development of industry, particularly heavy industry. In 1949, there were only 156,000 industrial staff and workers in Beijing, while by 1979 there were already 1.33 million (not including the construction industry, posts and telecommunications and the like). In the last 10 years, although the natural rate of increase of Beijing's population has decreased somewhat, the mechanical rate of increase is still on the rise. A rough estimate has been made that in the 3-year period 1977-1979 there was a net increase of more than 400,000, and the increase in the first half of 1980 is already several tens of thousands. The population explosion has increased the already great pressure on the city in many areas, traffic is congested, housing is scarce and the environmental quality is deteriorating constantly.

3. Experience shows that in industrial development it is only by thoroughly bringing into play the advantages of the location, stressing strong points and avoiding weak points, that it is possible to obtain the best economic results.

The total area of Beijing City is 16,800 square kilometers, of which only a third is flat. Land area is limited, energy and water are insufficient, mineral resources are lacking and transport conditions are unfavorable. However, for many years, an overstress on the rate of increase of industrial output value, on evenly developing a full complement of heavy industry sectors and on a complete industrial system has produced the abovementioned evident consequences, much as a person's shortcomings might be revealed.

Recently the Central Committee Secretariat made four suggestions regarding urban construction policy for Beijing. We believe that these four suggestions were made on the basis of a summarization of the capital's construction experience, with a new recognition of the capital's characteristics, and in keeping with Beijing's specific conditions, including the geographical surroundings, natural resources, historical development and the actual state of affairs. They have set a correct direction for future urban construction in Beijing.

We believe that to build Beijing into a first-class city which is politically stable, environmentally clean and attractive, scientifically and culturally developed and economically flourishing, we must make a major resolution to readjust industry in the city.

A. Readjust the investment proportionalities, alter our industrial structure, and control the scale of industrial development.

The expansion of heavy industry must cease, and the scale of industries which occupy a large area, consume large amounts of energy and water and cause serious pollution must be controlled. For historical reasons, the Shougang Steel Corporation is located on the upper reaches of Beijing's water supply, which is unreasonable placement. For many years Shougang's size has not been fixed; when the amount of iron produced has been greater than the amount of steel refined, steel refining has been increased, and when there has not been enough iron, iron production has been expanded. The result is that Shougang has been continuing to grow. Currently Shougang has become one of the units which occupy the most land and consume the most energy and water, as well as the worst polluter in the western suburban region. We believe that in the future Shougang whould not be expanded within Beijing, and that it must concentrate on innovation and latent potential. Consideration should be given to a planned transfer of the steel refining segment to the place where the raw materials are produced, Qian'an, Hebei Province, while the fuel can be supplied from Tangshan, which is not far away. The Beigang Steel Plant, which is located within Beijing City, is not only a heavy user of water, but regularly pollutes the city with dense smoke, and from the point of view of long-term development the question of moving it should be considered.

At present the Yanshan Petrochemical Corporation brings oil a great distance from Daqing oilfield in Heilongjiang Province or Shengli oilfield in Shandong to be refined into chemical products in Beijing. Its current 300-ton ethylene installation and other associated facilities are already very large. They not only produce serious air and subsurface water pollution in the district in which they are located, but in addition are bringing in water from several dozen kilometers away for production use. If another 300-ton ethylene installation is added, it is not hard to guess what the consequences will be. But as far as the current situation is concerned, we believe that they should "stop where they are."

B. Designate water resource protection districts and stringently protect water resources.

Hereafter, new polluting plants should not be built in water resources protection districts or near the upper reaches of water sources. Existing plants which are serious sources of pollution and cannot manage it must, depending on the situation, be closed, cease the type of production in question, be combined, change their production or be relocated. Those whose product generally does not serve this city and which pollute water resources must be resolutely closed down.

The Yongding River alluvial fan is one of the city's richest subsurface water resource areas, and most of the wells that supply the city with water are located there. But for historical reasons, many iron and steel mills and chemical engineering plants which produce serious pollution are located here. Because a certain agricultural pesticides plant in the southern suburbs had poor management during the production process, resulting in evaporation, emission, leakage and percolation, production accidents resulted in serious pollution of the neighboring subsurface water sources. Of 12 wells at a nearby water works, 4 began to smell because of pollution and could not be used for drinking water, so that it was necessary to abandon them. With plants of this type it is necessary to take decisive steps and resolutely close them down to assure that subsurface water resources will not continue to be polluted.

Furthermore, the Miyun Reservoir is currently an important source of water for Beijing and Tianjin. This water source, which the people call the "water of life," must be stringently protected. Upstream of the reservoir and in the areas arround it stringent control should be instituted, and building of new plants which cause pollution, the expansion of existing ones or relocation from elsewhere should not be allowed.

C. Control the size of the city, and give comprehensive consideration to placement of industry in the city.

Because of expansion of production activities and continuing increase in the size of industrial enterprises in Beijing City, the city is becoming more and more congested, plants and residential areas are overlapping each other, and environmental pollution is daily becoming more serous, with the result that planned readjustment of industry within the city can brook no further delay.

There are currently 700 plants of different types in the central part of Beijing, of which 80 percent alternate with residential districts, so that harm from the 3 wastes and noise and vibration seriously threaten the inhabitants. For example, a certain electroplating plant in the eastern part of the city consumes more than 60 tons of chlorine compounds a year, and not only have wells in its vicinity been polluted, but the water sources of the water company are already being threatened; again, a certain foundry which primarily produces blanks has gravely harmed the surrounding environment with its smoke and ash.

We believe that placement of plants in the central part of the city should be subjected to specific analysis on the basis of Beijing City's urban nature. Industries which cause serious pollution, whose noise and vibration seriously disturb people, which present a danger of fire or explosion, or which primarily process agricultural sideline products in the service of agriculture should be readjusted group by group and at different times. Plants whose main products are processed for other provinces or cities and which pollute the surrounding environment should be resolutely shut down. If the city's industrial production direction is made increasingly stable and placement is made more rational, the environment will be improved.

D. Take advantage of strong points, avoid weak points and thoroughly bring Beijing's advantages into play.

Beijing is our country's scientific and cultural center, and the country's highest scientific research organizations, and advanced scientific educational institutions and personnel are concentrated here. If this advantage is thoroughly brought into play and light textiles, foodstuffs, special crafts, printing, precision instruments and other industries which take up small areas, require a concentration of knowledge, consume small amounts of energy and water, require little transportation and have little or no pollution should be selected for development in the direction of high-quality and precision.

Beijing is also our country's ancient cultural capital, and one of the cities with the most ancient buildings and famous antiquities; we should thoroughly identify and utilize Beijing's natural scenery resources and famous antiquities and energetically develop the "smokeless industry" of tourism and the special handicraft, light textile, foodstuffs and other industries which serve it.

E. Prevention should take precedence over treatment, and newly constructed plants or relocated industries must be subjected to advance environmental evaluation.

The United Nations Environmental Planning Office is energetically promoting "ecological development," under which the speed of economic development and the placement of plants in cities should conform to ecological laws. Beijing's 30 years of experience in industrial development also proves that comprehensive planning, rational placement and rational development and utilization of natural resources is the main way of protecting the environment and preventing environmental disasters. However, past plant siting has generally been insufficiently rational, has been subjective and arbitrary, and has lacked a comprehensive analysis of the objective conditions. The Yanshan Petrochemical Corporation is a rather typical example. In the last few years, people have continually advocated building a new large cement plant with an output of several million tons a year in the Shisanling Reservoir scenic district; others sited a machine building plant in a river valley, so that when mountain floods occurred the plant's buildings and equipment were ruined, with the loss of several million yuan; in addition, relocation was originally done in order to decrease pollution and improve the environment, but on the basis of the situation a few years ago, many plants were relocated primarily in order to shift pollution.

We believe that in order to escape from the current passive situation with regard to environmental protection, we should make advance environmental evaluation work an institution within economic development. No construction certificates should be granted by the planning departments to plants which have not undergone advance environmental evaluation, the design departments should not do design work for them and the banks should not allocate them funds.

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LINKING OF INDUSTRIAL DEVELOPMENT, ENVIRONMENTAL PROTECTION URGED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 5, 1980 pp 12-14

[Article by Liu Hongqi [0491 3163 1477]: "Protecting the Environment and Developing Production"]

[Text] Environmental questions affect man's existence and development. When we develop production we must respect ecological laws and give attention to environmental protection.

The rise and development of environmental questions is intimately connected with the process of development of production. For example, the quantities of chemicals released into the environment by human productive activity are several hundred times as large as those released by volcanoes and rock weathering. Currently, of the world's 4.5 billion people, 40 percent live in cities, and most industrial enterprises are also located in cities and towns, where every year they discharge large quantities of the "three wastes." The total quantity of wastewater discharged is several hundred billion cubic meters, solid waste amounts to about a billion tons, and various aerosols also amount to about a billion tons. Large-scale discharges of the "three wastes" involve an immense secondary cost in pollution. It is reported that betewen 1971 and 1976 United States losses resulting from pollution by the "three wastes" alone amounted to 300 billion dollars, of which losses produced by air pollution accounted for 32 percent, losses produced by liquid wastes for 26.5 percent and losses caused by soil and solid wastes to 41 percent.

Since the First National Environmental Protection Conference in 1973, all the localities have engaged in extensive propaganda and have set up organizations and pursued environmental protection work, achieving considerable results. But as the economy has developed, because knowledge of the ecological viewpoint is limited and treatment measures are still subject to technological and economic limitations, especially during the turmoil of the last 10 years, environmental pollution has become increasingly serious. Currently more than 70 million tons of wastewater alone is discharged every day, most of it wantonly and without treatment, so that water sources have become seriously polluted. A survey of subsurface water resources of 44 cities indicates that 41 of them are suffering from pollution, and many of them have concentrations of harmful substances exceeding drinking water standards. Currently this country relies for energy primarily on coal, and consumes 600 million tons a year; it produced 120 million tons of coal ash, 20 million of flyash, and 12,000 tons of sulfur dioxide last year, seriously polluting large and medium-size cities and towns throughout the country. Industrial areas suffer particularly from smog, and almost all cities have dust deposition levels exceeding standards. The various industries throughout the country produce about 400 million tons of coal slag a year, and the comprehensive utilization rate is very low.

In the last 10-odd years, because our country has deviated from ecological laws in developing production, cases of deterioration of environmental quality have become common. Consider, for example, the world-renowned Guilin mountain scenery, and the splendid scenery on the banks of the Lijiang River: every day more than 100,000 tons of industrial and domestic wastewater is discharged there; of 300 smokestacks, 70 percent do not have smoke and ash removal; and dumping and discharge of coal slag have produced serious pollution of water and the atmosphere. Now oil floats on the water of the rivers, the water is turbid, the mountain rocks have turned white, plants are withering and while in the past Guilin's scenery was the most beautiful in the world, currently it is suffering from pollution. The Suzhou parks, a "heaven on earth" which attracted many, in the last 10 years have been so polluted as a result of unreasonable placement of industry and wanton discharge of the three wastes that the "heaven" is completely disfigured. In recent years, owing to construction of plants around it and direct discharge of domestic and hospital wastewater into it, Suzhou's pearl, West Lake, now has smaller numbers and fewer varieties of plankton, algae have begun rampant growth, suspended matter has increased, the lake water has become oxygen-impoverished, and the water ecology has undergone an abrupt change.

In carrying out industrial modernization, the developed capitalist countries went through a stage in which pollution was followed by treatment. We should analyze the lessons of their experience; we must not take the tortuous path that capitalism has taken in environmental protection.

Protecting against and eliminating pollution and protecting and improving the environment are an important condition for carrying out the four modernizations and an important aspect of socialist modernization. The problem of environmental pollution is manmade, and accordingly it must be solved by man. Currently, in order to solve the problem of environmental pollution by our country's industrial production, we suggest that the following main points be grasped:

1. Development of production and environmental protection must be coordinated.

The purpose of social production is to continuously satisfy the people's growing material needs, and in order both to expand production and to be able to protect the environment we must have not only a production viewpoint but an environmental protection viewpoint as well, and must establish firmly in our thinking the dialectical realization that "in expanding production we must devote attention to environmental protection, and environmental protection is aimed at expanding production better." Factory placement and size, process policy, equipment types and process regulations all must take account of environmental protection needs. The expansion of production by enterprises should not focus only on carrying out production tasks but also should take on the social task of environmental protection. Whether or not the relationship between development of production and environmental protection is harmonious is a strategic question of economic construction. If the proportionality between agricultural, light industrial and heavy industrial production becomes out of balance, our country's experience of socialist construction is that it can be set right by 10 or more years of effort; but if the environment is disrupted, it takes several decades, or an even longer time, and a rather high price for it to recover. Accordingly we must realize that good production work is aimed at improving the people's current standard of living, while good environmental protection work involves mankind's long-term interests or even the major question of whether or not he can exist.

2. Utilize strong points and avoid weak points, bring advantages into play, strengthen environmental protection management.

At present some countries are making rather large investments in order to solve the problem of environmental pollution. For example, every year the United States expends about 2-2.5 percent of the U.S. gross national product to prevent and treat pollution. In 1975, the Japanese investment in environmental protection was 2 percent of gross national product, and 7 percent of total industrial investment. In the last 10 years, the United States' annual equipment investment for treating pollution was 7 billion dollars. In the near term our country cannot have large funds for environmental protection investments, and accordingly we must base ourselves on this country's actual situation, accentuate the strong points and avoid the weak points, and select the best, most feasible methods of solution. In control and elimination of pollution and in environmental protection work, we must rely closely on and thoroughly utilize the existing enterprises as a great base. If the several hundred thousand industrial and mining enterprises and the tens of millions of employees with their rich experience, can increase their awareness of environmental protection one step and grasp production management and environmental protection work together, they will be certain to attain excellent results.

Basically, strengthening environmental protection management requires concentration on prevention, coordination of prevention and treatment, strengthening of management, use of management to encourage treatment, protection of the environment and development of production.

By strengthening environmental management work we can, while not increasing investment or while even decreasing it slightly, actually have both production and environmental protection achieve great results. On the basis of statistics from several enterprises, 70 percent of the causes of environmental pollution stem from poor management, 20 percent from a lack of comprehensive utilization, and only 10 percent from the technical factor of lack of purification equipment. For example, a chemical engineering plant discharged 90 tons of wastewater a day, and the masses inside and outside the plant complained about it a great deal; the top-level management handled it as a short-term treatment item and invested several hundred thousand yuan in it. But things proceeded so slowly that they could not solve the problem. When the environmental protection law was implemented and fines were collected for pollution, on the basis of the quantity of the plant's discharge it had to pay 400,000 yuan a year. Because environmental protection measures which were coordinated with economic methods were adopted, they stimulated the plant to control the amount of water used and to decrease pollutant discharge. In the past it had to discharge 90,000 tons of wastewater a day; now it has decreased the figure to 4,000 tons, and including implementation of other comprehensive utilization measures, it has only had to spend 40,000 yuan, while in a year it can recover 600,000 yuan. Clearly if we start by strengthening enterprise management, there is a great deal of latent potential for good environmental protection work.

Recently, the Central Committee Secretariat offered four suggestions regarding Beijing's work policy, requesting that Beijing be remade and built into an attractive, clean, first-class modern city and that it be made to develop in accordance with its function and characteristics as the capital, that overall planning be used and that the development of heavy industry be controlled; the suggestions pointed out the direction for improving Beijing's environmental quality, set environmental goals and received the support of the broad masses of the people, and thus constitute a strategic decision on environmental protection and development of production. Every locality and department can follow their comprehensive guidance for short-term and long-term development so as to provide the basic and essential conditions for development of production and environmental protection.

3. Grasp environmental protection and development of production together.

In the case of new construction, expansion, reconstruction and relocation projects, particularly engineering proposals in which the production process can result in great toxicity and extensive harm, the construction organizations must undertake or assign to the environmental departments for joint work the making of advance environmental quality evaluations for the plant site. These must include selection of a production technology approach for the project, a forecast of pollutant distribution and discharge quantities, a survey of the environmental condition of the plant site and an evaluation of expected environmental quality changes after it goes into production. The scientific data obtained from the advance environmental quality evaluation work are used to infer the changes in environmental quality that will result after the project is completed and put into production, and the effect on human health. The advance environmental quality evaluation will be used to produce an environmental quality report, and the environmental departments and relevant industrial leadership departments must give their approval before the design can be done. In carrying out the basic construction procedures for environmental protection facilities and construction on engineering projects, the "three requirements for simultaneity" [san tongshi 0005 0681 2514] must be strictly observed.

In the case of plants which have already gone into production, ways of controlling and eliminating pollution generally include: reorganizing the production technology approach with the adoption of nonpolluting or low-pollution raw materials sources so as to decrease sources of pollution by the three wastes; controlling feed ratios and reaction or combustion conditions in order to improve product yields, decreasing materials consumption and production of the three wastes, controlling volatilization, emission and leakage; strengthening recovery, and decreasing materials losses; implementation of separate collection and emission of concentrated and dilute waste chlorine, strengthening of the separation of clean and polluted flows, increased recycling of process water, economizing on water and electricity consumption, comprehensive utilization and recovery of useful materials, thorough utilization of the three wastes and waste heat, and suitable processing of those of the three wastes which cannot be utilized economically so that they present no harm to the environment. Taken together these approaches clarify an important point: that industrial pollution arises during the production process, and accordingly pollution control and elimination should as far as possible be made part of the production process. To realize this aim, the proper measures should be taken with regard to environmental pollutants in industrial production: different pollutants should of course have separate management, technological and equipment focuses, but first we must take steps to strengthen management, organize it in a rational way, and thoroughly mobilize people's enthusiasm for uniting environmental protection and expansion of production. In everyday life, we should constantly grasp the combination of environmental management and production management in a practical manner and embody the requirements of environmental protection in indicators, data, and job procedure regulations. They should be included in enterprise production technology and economic management, made a part of the enterprise's major indicators, and included among the criteria by which the work of the enterprise and of various relevant personnel are judged.

When we are drawing up production plans we should include environmental protection work in them. When we are developing the job responsibility system we must specify the environmental tasks and duties of the various positions and of management organs and personnel at the various levels.

When we issue the production plan, we must discuss implementation of the individual environmental protection work items; when we conduct production control analysis, we must include environmental analysis items in production control analysis plan.

When we address technical and economic consumption norms and carry out analysis of economic and technical activities, we must calculate decreases in the three wastes and compute economic results accounts for comprehensive utilization and waste accounts for emission of the three wastes, so that it will be possible to see what kind of contribution the enterprise is making to the four modernizations. When reviewing work we must review environmental protection work, and when summarizing production incentives work we must summarize the contribution of incentives to environmental protection.

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ACID RAIN THREAT TO BEIJING ANALYZED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 5, 1980 pp 17-19

[Article by Xia Zenglu [1115 1073 4389]: "Can Acid Rain Harm Beijing?"]

[Text] In Western Europe and North America acid rain has already become an important aspect of atmospheric pollution. Because it results in acidification of water bodies and soil, harms human health and plant and animal life, corrodes city buildings and affects the natural ecological system, it is already the subject of concern by the people and scientists of all countries. Currently our country is moving forward with the four modernizations, and industry will be developing rapidly; under these conditions, we will be investigating the origin of acid rain and what harm it does, and whether it can effect the Beijing area. These questions are worth attention and investigation.

1. What Is Acid Rain and How Is It Formed?

Acid rain is generally precipitation which contains a certain quantity of sulfuric or nitric acid. The pH of this precipitation water can reach 4 or even lower. The main factor leading to the low pH of the rain is sulfur dioxide, which produces sulfuric acid; the nitrogen oxides which produce nitric acid are very much a secondary factor. Accordingly, at present acid rain currently involves the common atmospheric pollution by sulfur dioxide.

In the natural world there are many sulfur-relasing phenomena. For example, lakes, marshes, low-lying ground and the continental shelf can give off some hydrogen sulfide, which is oxidized in the atmosphere to sulfur dioxide, and volcanos can give off small quantities of sulfur dioxide when they erupt. The sulfur given off in these ways is part of the natural sulfur cycle. Excluding certain very uncommon conditions, under which rather high local concentrations can be formed, concentrations are generally low, so that the atmosphere easily dilutes the sulfur dioxide, thus purifying itself and preventing the sulfur dioxide from becoming a significant phenomenon. Accordingly, under ordinary conditions acid rain cannot be formed. However, during recent industrial development, and especially as a result of large-scale use of coal and oil, large quantities of sulfur dioxide have been discharged into the atmosphere, so that the natural equilibrium of this sulfur cycle has been disrupted. According to statistics, between 1710 and 1950 the total annual quantity of sulfur dioxide emitted as a result of the use of sulfur-containing coal in Europe remained fairly stable at about 25 million tons. But as industry has developed at high speed, the quantities of sulfur dioxide emissions have increased sharply, currently reaching 60 million tons. It is estimated that currently 43 percent of the sulfur dioxide in the world comes from such manmade pollution sources as industry. Moreover, these manmade emissions of sulfur dioxide are generally concentrated in certain cities and industrial and mining localities, resulting in high local sulfur dioxide concentrations. Sometimes the concentration is several dozen times as high as under natural conditions, or even several hundred times. These high sulfur dioxide concentrations provide a sufficient material basis for the formation of acid rain in the atmosphere.

After sulfur dioxide enters the atmosphere, to become sulfuric acid it needs certain moisture conditions. A series of moisture condensation processes generally take place in the atmosphere, and when moisture condenses on the surface of suspended dust particles it forms a water film. When the sulfur dioxide which has entered the atmosphere comes in contact with these water films, it dissolves in them and forms a sulfurous acid solution. The reaction formula is: $SO_2 + H_2O \rightleftarrows H_2SO_3$. It has been reported that in dry clean air it is difficult for sulfur dioxide to form sulfurous acid, and it can remain in the air for 1 or 2 weeks. But in a moist and smoggy atmosphere, in barely an hour the sulfur dioxide can form sulfur trioxide. Clearly the atmospheric moisture concentration is a factor promoting transformation of sulfur dioxide.

Certain catalysts are required for the sulfurous acid solution formed by contact of sulfur dioxide with the water film to go on to form sulfuric acid. The main such catalyst is certain pollutants in the nuclei on which atmospheric moisture condenses, for example such metal ions as Mn^{2+} and Fe^{2+}, which function as catalysts in the further oxidation of sulfurous acid. It has been reported that in a clean atmosphere only 0.1 percent of the sulfur dioxide reacts every hour. But in a polluted and smoggy atmosphere, after 7 hours the reaction is 20-30 percent complete.

From analysis of the process of formation of acid rain we can see that acid precipitation results primarily from high atmospheric concentrations of sulfur dioxide which in the process of atmospheric moisture condensation comes in contact with water to form sulfurous acid, and is then catalyzed by certain pollutants, becoming sulfuric acid.

2. The Harm Caused by Acid Rain

The harm to human health caused by acid rain is great. In foggy Western Europe, people are particularly sensitive to it. It is thought that sulfuric acid fogs are 10 times as poisonous as sulfur dioxide. When the atmosphere contains 0.8 mg/liter of sulfur dioxide, people show no evident sensitivity. But people find it hard to bear a sulfuric acid fog of the same concentration; such respiratory tract illnesses as asthma result. In major world atmospheric pollution incidents, such as the London "smog incident," and the Tokyo "photochemical smog" incident, sulfuric acid fog was present. It is no wonder that people call sulfuric acid fog an ubiquitous assassin.

In Western Europe, and particularly in places that lack a carbonate rock matrix, sulfuric acid does particularly grave harm to ponds and lakes. In these places the pH of the precipitation regularly reaches about 5.0. Because the acid rain that falls on the earth's surface cannot be neutralized by the surface material during the runoff process, the acidity of pond water increases very rapidly. According to a survey of 400 lakes among the 3,000 on the west coast of Sweden, about half had a pH of 6.0 or lower. In spring and fall, as many as 22 to 36 percent of the lakes had a pH of 5.0 or below. Especially in the last 20 or 30 years, the pH values of some lakes have fallen 1 or 2 units. Because acid rain has a very corrosive effect on elements in the earth's surface, the chemical characteristics of the lakes have changed. In addition to an increase in sulfates in their composition and the conversion of calcium and magnesium carbonates to acid sodium, calcium and magnesium sulfates, concentrations of iron, manganese and other metals also increased. Because of the acidity of the lake water, the aquatic ecology underwent a series of changes. When the pH of the lake water fell below 5.8, many types of plankton such as diatoms and green algae disappeared, large quantities of aquatic animals gradually died out, and fish growth and reproduction were affected. When the pH of the pond water fell below 5.0, large numbers of fish died, and even some relatively insensitive fish such as perch and pike were strongly affected. Accordingly in Western Europe and North America, because of the acidification of ponds by acid rain, fish have died out or yields have decreased in thousands of ponds. Some areas in which people raise trout were also gravely threatened. It is estimated that if current acid rains are not controlled, but continue to develop, Sweden's thousands of ponds and lakes will gradually become acid lakes.

Acid rain also has serious effects on forests. It can hinder the sprouting of tree seeds and decrease forest leaf area and bark nitrogen fixation. It can also dissolve and remove nutrients in the leaves. When the soil is acidified by acid rain, the acute change in chemical processes in soil organisms may affect the entire forest ecological system. Because of the complexity of the situation, the consequences of these effects are still hard to foresee, but the direct results of acid rain have already been reported abroad. Swedish statistics indicate that acid rain effects cause an annual loss of as much as 4.5 million cubic meters of lumber.

Corrosion of city buildings, machinery, bridges and works of art by acid rain is even more shocking. The statue of Charles I in London's Traflagar Square has been so corroded by acidic pollutants that it is already unrecognizable. The old art gallery in Munich, West Germany and Koln cathedral show evident damage. Acid rain's corrosive effect on metal is produced by H^+ and SO_4^{2-}. It also interacts with dry deposits of sulfur dioxide on the metal surface, promoting corrosion. However, it also has the effect of cleaning off dry sulfate deposits. Accordingly, the intensity of the effect is determined by whether the deposits are dry or moist. Experiments indicate that the rate of corrosion of metal is faster in cities with much precipitation than in those with little precipitation, and faster in cities than in the country. The rate of corrosion of carbon steel, for example, was 8 micrometers per year in the village of Fulahuerte [phonetic], while in the city of Stockholm it was 30 micrometers per year. Determination of rain sulfur content in 7 cities revealed that the sulfur content was closely coordinated with the metal corrosion rate. A correlation formula between certain climatic factors (humidity), sulfur dioxide content and corrosion has even been derived. In 1970 it was calculated in Sweden that every year the cost of corrosion of buildings and expenditures to protect them from early corrosion was 47.5 billion U.S. dollars. The United States figure is even higher, amounting to 147 billion dollars a year.

The effects of acid rain on the natural ecological system cannot as yet be comprehensively and precisely estimated. However, since acid rain has already produced evident effects on ponds and aquatic ecologies, its effect on soil and terrestrial ecological system can be imagined; research indicates that acidification of the soil can weaken or hinder nitrification in it and increase soil ammonification. Acid rain can effect the symbiotic balance between certain soil organisms and increase the rate of release of certain harmful metallic elements. The changes in the balance between a number of nutrient elements in the soil, and in soil organisms and biochemical processes in them produced by these effects must inevitably lead to changes in the terrestrial ecological system.

3. Can Acid Rain Do Harm in the Beijing Area?

Can acid rain be formed in the Beijing region, and can it produce harm? Because no extensive and thorough studies have been made, this is still hard to predict. Some say that the carbonates in Beijing's soil have a strong buffer capability, so that acid rain cannot be formed, and that even if it were it could not do much harm. This argument seems a little arbitrary. Because most soils in the Beijing area contain large amounts of carbonates and the soil pH is above 7, microscopic particles in the atmosphere resulting from local dust or coming from the northwest mostly contain carbonates. They can act to neutralize acids and prevent the pH of the water film on condensation nuclei from decreasing markedly. However, the development of things is not limited to internal causes; we must also consider externally caused processes. The acid resistance of microscopic particles in the atmosphere around Beijing may be a factor impeding the formation of acid rain, but it can only be a limiting factor, not a fixed, decisive factor; when there are large sulfur dioxide emissions in the area, the sulfur dioxide in the atmosphere is continuously available to incipient precipitation, so that this limiting factor can gradually disappear. The key factor here is sulfur dioxide emissions and their concentration in the atmosphere. Statistics indicate that in 1979 sulfur dioxide emissions in Beijing were higher than in both Tokyo and Los Angeles. Both Tokyo and Los Angeles have suffered from acid fogs, and if Beijing is attacked by such a high SO_2 level, can it be unaffected?

Actually, it has been reported that soils in the extreme south of Sweden contain carbonates just as those of Beijing do. But because of manmade pollution, acid rain has also been produced there. A small number of measurements made by the Institute of Geography, Chinese Academy of Sciences, indicate that the pH of rain in the Beijing area is generally about 6.5, with a single measurement of 7.3 recorded at Sanjiadian. Sanjiadian is in the Beijing suburbs, and if we take this reading as the reference point, the pH values of precipitation in the city are slightly lower. Is this the result of acidification? Moreover, in 1973 a value of 5.5 was measured at Beifengwo. This is a rather low value. On the basis of the foregoing, it may be premature to conclude that because the Beijing area has a certain capability for resisting acid, acid rain cannot be produced.

As for the contention that even if acid rain were formed it could not do much harm, this also merits discussion. We can imagine that because the area's soil contains carbonates, when acid rain accumulates on the surface it is neutralized during runoff, finally losing its acidity, which would indeed have a certain protective effect on the environment and give this area a rather strong acid-resisting capability. However, the drab soil production process in the Beijing area has already given evidence of a certain leaching effect. The soil leaching process is of course extremely slow. However, under the influence of acid rain, it could speed up noticeably. Such instances have already been reported abroad. For example, because of constantly increasing amounts of acid rain, the pH value of heavy calcareous clay soils in the southernmost part of Sweden dropped from 7.5 to 6.5. When artificial acid rain (pH 3.0) was applied to the fields when planting 2 crops of vegetables, the soil pH dropped measurably. According to foreign estimates, if affected by rather strong acid rain, over the course of 20 to 40 years carbonate-containing soils can possibly become acidic soils. Accordingly, it is not impossible that the soils in the Beijing area might gradually become acidified under the long-term influence of acid rain. If the soil were acidified, it would be easy for the precipitation to become acidic as a result of a lack of condensation nuclei of an acid-neutralizing type. If this continued, acidification of the environment could be intensified.

In addition, the corrosive effects of acid rain on city buildings, machinery, bridges and works of art are rather direct. They are relatively little affected by the protective effects of carbonate dust. Considerable corrosion of buildings, bridges and antiquities has already been discovered in the Beijing area. Corrosion of iron and steel products is also common. Corrosion of the white marble and other marbles in certain famous Beijing antiquities has been discovered. All of these circumstances merit attention.

Can acid rain form in the Beijing region, and can acid rain do harm to the environment? This is a topic which urgently requires thorough study and should receive a precise answer.

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POLLUTANT DISCHARGE FEES DISCUSSED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 5, 1980 pp 23-26

[Article by Zhou Fuxiang [0719 1381 4382]: "The Theory of Pollutant Discharge Fees, and an Investigation of Problems Arising in Its Implementation"]

[Text] Since last October, on the basis of the relevant provisions of the "People's Republic of China Environmental Protection Law (Trial Implementation)," many provincial and municipal National People's Congress standing committees and people's governments (revolutionary committees) have issued guidelines and regulations regarding the collection of pollutant discharge fees for emission of pollutants in excess of state standards; they have also been experimentally implemented in a number of enterprises and services. Experience with the trial implementation proves that the collection of pollutant discharge fees uses economic levers and links environmental work with the operating results of the polluting units and with the employees' interests, helps mobilize enthusiasm for pollution control, and is an effective economic measure for environmental protection. This paper will discuss the theory of pollutant discharge fees and some problems of their implementation.

The Theory of Pollutant Discharge Fees

From the present standpoint, there are two different types of pollutant discharge fees. In one case, when an enterprise discharges wastewater into the municipal sewage system, it must pay a certain amount to the municipal wastewater treatment plant; in the other, when an enterprise discharges wastewater into a river or discharges waste gases into the atmosphere, thus polluting the natural environment and harming the interests of society, it must pay a certain pollution fee. The former charge is easy to understand, for when wastewater is discharged into the treatment plant's pipeline system, naturally part of the investment in the sewage system equipment and the transport and treatment expenses should be borne by the party that discharged the wastewater; this type of fee has long been in existence. The pollution fees in force in Baoding City, Hebei, are of this type. But the present article is intended to discuss the other type of pollution discharge fees.

For a long time, it was thought that rivers and the atmosphere had an unlimited ability to purify pollutants, and when pollutants were present a flood or a wind storm could eliminate pollution. Accordingly, when building factories, people generally used rivers as wastewater discharge channels, the atmosphere as a waste gas disposal area, and the soil as a solid waste dumping area. Moreover, many design personnel or enterprise leaders who wanted to save the fees and investments for treatment of wastewater, waste gas and solid waste gave little thought to the negative consequences that could come of discharging pollutants into the natural environments. Only since the 1960's, when environmental pollution became a major world concern, has it begun to receive serious attention. Water sources such as rivers and lakes, as well as atmospheric resources and soil resources, are by no means unlimited. Although water and the atmosphere have the capability of diluting and purifying wastes, ultimately they have certain limits, and if these limits are exceeded they will lose their capabilities and environmental pollution will be produced; furthermore, they are a resource for the continued existence of humanity, and if this resource is disrupted, man's existence and the development of industry and agriculture can be affected. Accordingly we must strictly control emissions of pollutants, prevent pollution and preserve water, atmospheric and soil resources.

When an enterprise discharges a pollutant into a river or the atmosphere and pollutes the environment, this inevitably has its cost, and the enterprise must take economic responsibility for it. The economic responsibility includes two things: first, since water and atmospheric resources are limited, if someone damages them he must take economic responsibility for recovering them; second, someone who pollutes water or the atmosphere has caused a loss to society, and he must take economic responsibility for controlling the pollution and compensating the loss. If someone discharges pollutants in excess of state standards and regulations, it is reasonable that he should take economic responsibility for this, and pay a certain pollutant discharge fee. On the other hand, including this pollution fee in the enterprise's production costs helps to oversee and stimulate enterprise pollution control and protect the environment. The first country to implement taxation for pollutant discharge was West Germany, which applied this policy to the seriously polluted Ruhr industrial district in 1904 [as published]. In September 1976 it formulated the world's first pollution taxation law, the "Law on Taxation for Discharge of Wastewater into Water Sources." This law specifies that starting in 1981 pollutant taxation will apply universally. The United Nations Conference on Trade and Development held the first environmental ministerial conference in November 1974 and defined the principle of pollution fees.

We are a country under the system of public ownership, and enterprise interests and society's interests are essentially identical. This is a difference from the capitalist private ownership system. The state can use planning of the national economy to make economic development and environmental protection proceed in harmony with each other; and by planning it can oversee enterprises and encourage them to control pollution, gradually, group by group and at different times. But in practice, because their positions are different, enterprises generally lay particular emphasis on product output rather than on pollution control, and some, for the particular economic interests of the enterprise, purposely discharge pollutants and harm society's interests. Accordingly, in order to encourage enterprises to speed up pollution control it is also necessary to adopt the economic device of pollution emission fees as a measure in support of the plan.

The purposes of our country's implementation of the pollutant discharge fee are: first, to make it clear that if an enterprise discharges pollutants and pollutes the environment, it must take economic responsibility for cleaning up the pollutants; second, use of the economic measure of pollution fees assures implementation of the state's environmental protection objectives and plans; third, it connects pollution control closely with the enterprise's reform of manufacturing processes and production management, favors decreased waste and conservation of resources, and gives an incentive for the development of production. In view of the experience in implementing pollution fees in Suzhou, Yunnan, Jinan, Hangzhou and Lanzhou, their effects are outstanding. First, they have reformed the past practice of relying on state investments for pollution control, have mobilized great enterprise enthusiasm for pollution control, and have accelerated its pace while also saving resources. For example, the Guangming Phosphate Fertilizer Plant in Yunnan discharged large quantities of fluorine-containing wastewater, and was an important source of pollution of the Tanglang River. At the beginning of 1978, the provincial environmental protection office was preparing investment for pollution control in this plant, but the plant's leadership was concerned that installation of closed-cycle wastewater facilities might affect the output and quality of phospate fertilizer, and refused to accept the investment. Last year it reluctantly accepted the investment, but never was enthusiastic about pollution control. In October it learned that it would have to pay a pollution fee, and in that month it commenced work on the pollution control project; while making a major construction effort, it also did everything it could to use and recycle process water, which quickly reduced wastewater discharged by the plant by more than half. The Huasheng Paper Plant in Suzhou City was in a similar situation: for many years pollution control had been proceeding only slowly, and last year when the pollution fee was implemented, according to regulations this plant had to pay 63,000 yuan per month, which would have raised its production costs by 3.8 percent and decreased staff and worker year-end bonuses by 10 yuan each. The plant leadership was extremely concerned; it held a staff and workers representative conference at which it explained the bill accurately to the employees and proposed an 8-point program for increasing output and engaging in conservation, requesting everyone to begin decreasing waste and strengthening management of the enterprise so as to make up for the increase in production cost resulting from the fee. At the same time, it adopted a new process using the efflux air flotation method to recover clear water on the No 2 paper machine. In just a few months, the plant's wastewater emissions were decreased by 30 percent, and the total quantity of organic material lost in the wastewater decreased from 120 tons a day to 39 tons a day. The total saving on production costs for 1979 was 524,000 yuan, a decrease of 3.7 percent from the plan figure, realizing a profit of 4.85 million yuan, up 250,000 yuan from the plan. Not only did the pollution discharge fee not increase production costs, but it actually saved resources, decreased waste and increased profit.

What kind of fee is the pollutant discharge fee? Is it a fine or a tax? This is a problem that merits study. Different approaches are used abroad. I believe that it is more reasonable for it to be a tax in our country. The reasons are: First, under most circumstances, the pollution resulting from discharge of pollutants by our country's enterprises is not the enterprises' fault, but was caused by the state's (including the local governments') failure to pay attention to environmental protection when arranging for production construction. When they were under construction, many enterprises did not institute pollution prevention measures, and some cut them out in order to save on investment; some leading departments laid excessive stress on production indicators, and only requested that the enterprises increase their production capabilities, paying no attention to recovery of byproducts or purification and treatment of pollutants; some of them only issued plan targets for products and did not have any requirement for antipollution measures, so that many enterprises could not meet state standards regarding discharge of pollutants, which resulted in serious pollution. Many enterprises in this country built themselves up gradually by simple and thrifty operation and adopting local methods, so that they were far behind on pollution control equipment. Accordingly, it is unreasonable to expect that the enterprises will bear the whole of this historical economic responsibility. Second, the purification expenses which an enterprise saves by not having pollution control equipment ultimately are paid over to the state in the form of profit payments. Third, some of the "Experimental Standards for Discharge of the Three Wastes by Industrial Enterprises" issued by the state are quite unreasonable and unscientific. Accordingly it is more reasonable for pollutant discharge fees in this country to be a kind of tax.

Principles of Determining Pollutant Discharge Fee Standards

In theory, the pollutant discharge standards should be slightly higher than purification treatment expenses. This can be expressed in the formula

$$W \geqslant Zn + C,$$

where W is the pollutant discharge fee, Zn is the depreciation expense on transport equipment, and C is the treatment expense (including manpower and raw and other materials).

High pollutant discharge fees help encourage polluting units to control pollution. Low fees may cause polluting units to prefer to pay the fee rather than construct pollution-control facilities. However, if the fee is too high it may cause the enterprises' production costs to increase and decrease their accumulation rates.

The pollutants discharged by an enterprise generally contain many different materials, and accordingly some provinces and cities use a multifactor-cumulative method to set the fees, i.e. they calculate the extent to which different pollutants exceed standards separately, then calculate the fee. Theoretically there is some point to this method, but in real circumstances, the pollutants discharged by many enterprises in this country exceed the standards by large amounts. If the calculation is made by this method, there will have to be a payment of several yuan, 10-odd yuan or even several tens of yuan per ton of wastewater, which will inevitably exceed the enterprises' economic capabilities. These enterprises cannot establish pollution control measures in a short time, and some will also want to couple them with process changes. Accordingly, in studying how most reasonably to fix the fee standards, the investigation should not proceed only in theoretical terms, but should be conducted concretely, in connection with the actual situation in this country.

When we talk about their being reasonable, I believe that this primarily means that when the fee standards are established they should square with the actual circumstances of pollutant discharge by enterprises in this country. In view of the fact that the vast majority of this country's industrial and mining enterprises do not have pollution control facilities, it is to harsh an approach to implement the emission standards issued by the state, and accordingly the fees cannot be set too high and the categories for fee determination cannot be too detailed. The following principles can be considered for the fees:

1. Fee standards can be differentiated for enterprises without pollution control equipment and those with pollution control equipment. The fees can be set a bit higher for enterprises which have pollution control equipment and cannot operate it normally, or which have poor pollution control results that do not stem from design. The fee standards for such plants can be fixed in terms of the expenses for normal operation of the pollution control equipment to encourage them to take effective steps to put the treatment or recovery equipment into normal operation.

2. Fee standards can be differentiated to some degree for new and old enterprises. The fee standards for newly constructed enterprises should be somewhat more stringent and those for older enterprises somewhat more lenient.

3. Fee standards can be differentiated for enterprises for which pollution control technology is adequate and those for which pollution control technology is not adequate. In particular the fee standards can be set higher for cases where the pollutants cause serious harm and for which there is a mature treatment technology so that it is possible to control pollutants without a very large expenditure, in order to encourage the enterprise to take control measures in good time and decrease pollution. The fee standards can be somewhat more lenient in the case of pollutants for which control technologies are not adequate.

4. The fee standards can be differentiated for large-to-medium-size enterprises on the one hand and medium-to-small-size enterprises on the other. In general, the fees for medium-to-small-size enterprises should be more lenient.

In sum, the setting of pollution fee standards should be based on the actual circumstances and should achieve the goal of both favoring pollution control and being able to encourage the development of production.

Principles for the Use of Pollutant Discharge Fees

In theory, the principles for the use of the pollutant discharge fees are determined by their character. As we said above, we believe that the fees should be taxes rather than fines in nature, so that like other taxes, after they are collected by the environmental protection departments they are deposited in the local financial organizations and are fully controlled by the locality. This approach has several advantages. First, the local governments can carry out overall planning for their use and strike an overall balance. Second, this helps bring environmental planning into the orbit of production construction planning. Third, it favors unified consideration in connection with the development of production. If the environmental protection departments control this money, this will completely shift the responsibility of pollution control onto these departments; in some cities, after the environmental production departments collected the fees, the industrial and mining enterprises came to them in large numbers to ask for pollution control investments and requested that the pollution control departments arrange for the equipment and construction manpower and the like. This approach is not consistent with the principle established in our country that "The one who pollutes must bring it under control," and is also unfavorable for mobilizing the enthusiasm of the cognizant departments and the enterprises for pollution control, to say nothing of connecting environmental protection work with production construction and overall planning and disposition.

The pollutant discharge fees collected locally can be used as an environmental protection funds, as in the case of the forestation fund set up by the forestry departments, and the funds can be used solely for pollution control and improving the environment. In the country's current economic system, most of the environmental protection funds will have to be used for control of pollution sources, including readjustment of placement of industry, and as subsidies for environmental monitoring and scientific research and the like, in addition to which they can be used as awards to enterprises which control pollution and protect the environment.

The pollutant discharge fee is an economic measure with a strong policy aspect, and the fixing of fee levels is particularly complex. Accordingly, in implementing the pollutant discharge fees, we must first organize manpower and carry out comprehensive surveys and determinations of the quantities of pollutants discharged by industrial and mining enterprises in the area and the concentrations of harmful substances, and in addition set up a good monitoring system, including scheduled monitoring in the plants themselves. Judging from the experimental implementation in various locations, there are still many problems in our provisional standards for discharge of the three industrial wastes, and they are really insufficiently scientific and insufficiently reasonable to serve as legal bases for the pollutant emission fees. It is best for each locality to draw up its own discharge standards and use these to determine the fee levels.

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NUCLEAR POWER PLANTS DESCRIBED AS ENVIRONMENTALLY SAFE

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 5, 1980 pp 45-47, 27

[Article by Li Qidong [2621 0796 2639]: "Nuclear Power Stations and the Environment"]

[Text] 1. The Current Most Competitive Energy Source

Currently the energy sources which we use in the largest quantities are coal and petroleum. It is estimated that recoverable coal and petroleum in the earth's crust are only sufficient for 100 years, in addition to which since coal and oil are important chemical engineering raw materials, using them as fuels is extremely irrational. Water power, wind power, tidal power and geothermal power have many limitations, and although solar power is excellent, it is limited by the utilization technology, and in the next few decades it will still not be possible to use it on a large scale. Accordingly, nuclear power is the power source which is currently most competitive with fossil fuels. Currently, power stations using light water reactors have already been in successful operation for many years, and the cost of the electricity they produce is lower than that of fossil-fuel electricity (in U.S. coal-fired plants the price is about 1.8¢ per kilowatt-hour, while in oil-fired plants it is about 3.34¢ per kilowatt-hour and in nuclear power plants about 1.52¢ per kilowatt-hour), which clearly demonstrates its economic superiority. Reserves of fissionable materials can meet the needs of human society for several hundred years or even longer. There is in the nuclear field an even more desirable power source, fusion energy, whose use is expected to become a reality in the 21st century, and it will be only at that time that there will be a truly inexhaustible, ideal energy source. Accordingly it is reasonable to say that nuclear power must be developed.

Because of many historically based doubts about the safety of nuclear power stations and some unnecessary fears of radiation, the development of nuclear power has been accompanied by certain mental blocks. How much radiation is there actually? How big an effect can it have? In order to answer this question, we must first come to an understanding of radiation in the environment.

2. Constant Radiation Sources in Our Surroundings

Some people associate radiation with nuclear explosions and the deaths they cause or with a lowered white blood cell count, less of hair and the like. But in reality this is not quite the case. Let us point out that there are radiation sources everywhere in nature, even in your own body, which follow you constantly and cannot be escaped for even a moment. This is because there are a number of radiation-producing factors constantly at work in the environment, including natural radioactive elements such as uranium, thorium, radium, potassium 40 and the like, which are mostly present in rocks and minerals and become dispersed through the ground as the result of many years' weathering and by mining activities, while the decay products of these nuclides, such as radon and fen [3050], are gases and are constantly diffusing through the atmosphere; this is one source of the radiation received by the human body. These radioactive elements also are constantly present in building materials, so that it is possible to be subjected to radiation by living in a house, with the levels reaching several dozen millirads a year. Cosmic rays are an important source of natural radioactivity, for they generally include some high-energy neutrons, protons, deuterium nuclei and the like, which when they enter the atmosphere interact with the air to produce a number of radioactive nuclides such as tritium, carbon 14 and beryllium 7, maintaining them at a certain concentration in the atmosphere.

What may startle you even more is the fact that 10 different nuclides such as potassium 40, carbon 14 and rubidium 87 constantly have a certain concentration in the human body, and constantly subject people to radiation; it is estimated that the average potassium content of the human body is 0.2 percent, and that of chronium 17 ppm, so that these radioactive nuclides alone in the human body subject people to a radiation dose equivalent to about 18 millirads a year.

In addition to natural radioactivity, various human activities have produced man-made radioactive pollution in the atmosphere and the environment, and have increased the level of radioactivity in our surroundings. A relatively important factor is radioactive diagnosis in medicine, radiation treatment, isotope medicines and the like. Another important source is nuclear weapons tests: 1 minute after the explosion of a 1-megaton or larger nuclear device 4×10^{12} curies of radioactivity will enter the atmosphere, most of it forming radioactive dust, which continuously settles to the earth's surface as fallout. Between World War II and 1963, the Soviet Union, the United States and the United Kingdom detonated nuclear devices equivalent to 511 megatons of TNT, producing rather large-scale and serious pollution.

Another source is the nuclear power supplies carried by satellites and spacecraft, which can be dispersed through the atmosphere by an accident, as in the case of a U.S. satellite which as the result of an unsuccessful launch on 21 April 1964 returned to the atmosphere at 150,000 feet and burned up, dispersing 17,000 curies of plutonium 238 into the atmosphere, which it is estimated will be settling to the earth's surface for about 70 years. The Soviet Union uses a reactor as a power source in radar satellites, but on 24 July 1978 Kosmos 954 fell and burned up completely, scattering fragments through the atmosphere and increasing the radioactive pollution of the environment.

Once we know the sources of radioactivity in the environment, when we compare them with the amount of radiation produced by nuclear power, the latter is insigificantly small.

3. A Truly "Clean" Energy Source

Among the energy sources which are currently economically significant, nuclear power is one of the cleanest, because since the day it originated the nuclear power sector has considered waste treatment and environmental protection as primary concerns. Since currently more than half of the nuclear power stations in operation worldwide use pressurezed water reactors as a source of steam, we can take the pressurized-water reactor as an example to consider just how great an influence on the environment nuclear reactors have.

Fig 1 is a diagram of a pressurized-water nuclear reactor in which the reactor core is made of uranium oxide fuel elements with zirconium alloy cladding, which under the influence of neutron bombardment undergoes fission and emits heat; the heat is carried away by circulating water and produces steam in the secondary circuit to drive a steam turbine generator. But the fission process also produces large quantities of fission products, which are the source of the hidden danger of a nuclear power station. In order to prevent radiation release to the surroundings, several barriers have been installed. The first barrier is the zirconium alloy cladding, which is especially strong and resists cracking, so that 99 to 99.99 percent of the fission products are sealed inside the cladding and are not released to the outside. But there can be 0.01 to 1 percent of the components which fail and crack, allowing the fission products to enter the coolant, and make it rather strongly radioactive.

Although the coolant is sealed in the pressure vessel, cracking of the pipes or leakage in pumps and valves can allow the fission products to enter the containment vessel. Some of the gaseous and liquid wastes are produced in this way. In order to decrease radioactivity levels in the coolant, desalting devices which contain large amounts of ion exchange resins constantly filter it, eliminating soluble fission products and solid microscopic particles. The used ion exchange resin is the main solid waste from nuclear power plants.

Of the solid, liquid and gaseous waste products released by nuclear power stations, the main source of radiation for humans is gaseous waste. Accordingly in the past 20 years a great amount of research work has been done worldwide on gas purification, and effective results have been achieved. In gas purification treatment, the delayed decay and emission method is used for relatively short-lived nuclides, requiring that before they are emitted from the stack they be delayed for a certain amount of time so that most of the short-lived isotopes decay and disappear. High efficiency filters are used with radioactive aerosols and particles. Filters with wet activated charcoal or yinfeishi [6892 3110 4258] produce a very great filtering effect on volatile materials such as iodine and ruthenium. There are a number of treatment methods for the inert gas krypton 85 and tritium, but not many of them are used in commercial nuclear power plants. A flowchart of the waste gas treatment system generally used in pressurized-water reactors is shown in Fig 2. The quantities of inert gases, halogens and particles released into the environment after this kind of treatment are only a few percent of the permitted levels.

The above simple introduction and 20 years' experience prove that nuclear power plants have a very small effect on the environment. In contrast, fossil-fuel-powered stations, to which everyone is accustomed and which are not considered a cause of fear, actually have far greater effects on the environment than nuclear power stations. According to U.S. statistics for 1968, every year atmospheric pollution from fossil-fired power plants includes 100,000 tons of carbon dioxide, 5.6 million tons of particulate matter, 16.8 million tons of sulfur dioxide and 400,000 tons of nitrogen oxides, producing large quantities of serious atmospheric pollution. If concentrations of carbon dioxide in the atmosphere are allowed to rise, the effects of the resultant heat effect will be unthinkable. Not only that, but even their radioactive emissions exceed those of nuclear power plants, a 1-million kilowatt coal-fired power station releases radioactive material in coal which, assuming a minimum uranium content of 1.1 ppm and a thorium content of 2.0 percent in the original coal, will amount to 350 millicuries of radium 228 and 550 millicuries of radium 226 into the environment; if these quantities are converted into cancer incidence, fossil power accounts for 2.4×10^{-6} cases a year and nuclear power 3.4×10^{-8} cases a year, and although these numbers are very small, the danger from fossil-fueled power plants is 70 times greater than that from nuclear power plants. This shows even more forcefully that nuclear power plants are truly a clean power source.

4. Nuclear Power Plants Are Basically Different from Nuclear Bombs

"Although nuclear power plants in normal operation are safe, if there is an accident there might be a nuclear explotion"; this is another concern that troubles some people. What is the real state of affairs? In the more than 20 years since the startup of the first nuclear power station in 1954, there have been more than 100 large and small accidents, but in essence none of them produced any great pollution of the environment. This is because of a variety of safety measures and treatment of the three wastes in nuclear power stations; and the consequences of the accidents actually confirmed the safety and reliability of nuclear power plants.

What exactly is a nuclear power plant accident? These are actually reactor accidents, and can be classified in three categories: (1) criticality accidents; (2) fuel meltdown and cladding failure accidents; (3) reactor and power station equipment failures. All of these types of accidents have occurred, but the maximum likely accident from whatever cause is a "coolant loss accident," while a more common one is a cladding failure accident. Because dense monitoring systems have been designed and there is a series of safety measures, accidents can be suitably handled and cannot produce grave results. This safety equipment includes: the containment vessel, the contaminated water reservoir, water cooling, a reactor core emergency cooling system, a fog system, a cooling circuit filtering system and so on. These are shown in Fig 3.

Let us know consider the environmental effects of several relatively major accidents. In January 1961, the SL-1 experimental boiling reactor in Idaho momentarily went critical as a result of excessively rapid withdrawal of the control rods, resulting in melting of 20 percent of the components, but the 5 percent of radiation was kept within the containment vessel, so that it did not cause any environmental pollution. Even in the case of the earth-shaking 28 March 1978 accident at Three Mile Island in which coolant loss caused a partial core meltdown, so that 10 percent iodine 131 and cesium 137 entered the coolant, a complete investigation showed that during the accident only 1 curie of iodine was released, and the iodine content in environmental samples was about 1/300 the maximum permissible value; the Food and Drug Administration inspected 377 samples and did not find any emissions from the power plant. The radiation dose received by the public did not exceed 100 millirems, which is equivalent to the base value of natural radiation which they receive, so that the consequences were insignificant. This fact further shows the safety of nuclear power plants: even though an accident occurs, it cannot have any major effect on the environment, much less produce a nuclear explosion, because the fuel of a nuclear power plant is different from that of a nuclear bomb; even if the fuel of a nuclear power station were placed in a nuclear bomb it could not explode--even less so given the various reactor design safety features. This is why we say that nuclear power plant accidents are avoidable and are not grounds for fear.

5. A Brilliant Future

As nuclear technology has developed and the cheapness and safety of nuclear power plants has gradually increased, stress has come to be placed on increasing the quality of equipment assemblies and components; currently the component failure rate is generally less than 0.01 percent, while investigation and location of cladding failure has led to better approaches. If an accident should occur, the safety systems will immediately react and bring it under control, waste treatment is daily improving, and accordingly the superiority of nuclear power plants will be further brought into play.

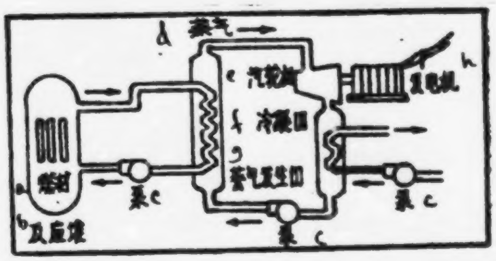

Figure 1.

Key:

a. Fuel
b. Reactor
c. Pump
d. Steam
e. Steam turbine
f. Condensor
g. Steam generator
h. Electrical generator

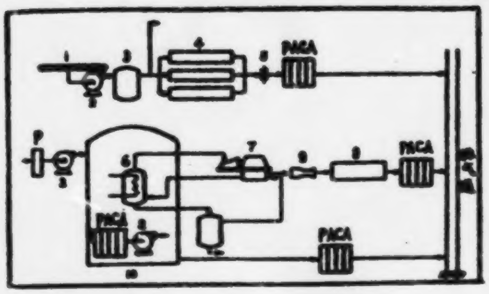

Figure 2. Waste gas system of pressurized-water reactor power station

Key:

1. Gas collector for main cooling system circuit
2. Compressor
3. Surge tank
4. Decay tank
5. Perforated plate flow regulator
6. Steam generator
7. Steam turbine
8. Condensor
9. Air jet
10. Safety containment

P. Prefiltering unit

C. Activated charcoal filter

A. High-efficiency filter

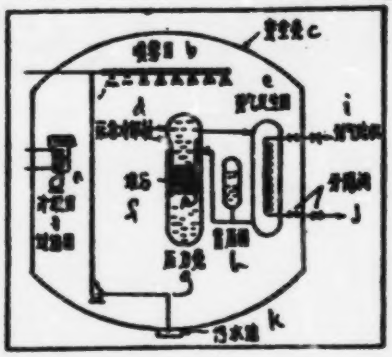

Figure 3. Safety equipment of typical pressurized-water reactor power station

Key:

a. Condensor and filter

b. Fogger

c. Safety containment

d. Emergency coolant

e. Steam generator

f. Reactor core

g. Pressure vessel

h. Surge tank

i. To steam turbine

j. Isolating valves

k. Wastewater sump

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CSO: 5000

PEOPLE'S REPUBLIC OF CHINA

ENVIRONMENTAL ADVANTAGES OF METHANE PRODUCTION DETAILED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 5, 1980 pp 28-29

[Article by Jin Shui [6855 3055]: "Extensive Methane Production Is Advantageous to the Agricultural Ecological Balance"]

[Text] For a long time, most of the countryside has been accustomed to use crop stalks and grasses as fuel. As our country's rural population has increased sharply, the quantities of household fuel required have increased considerably, and cannot be met solely by burning stalks. People are even at the point of stripping turf, digging up grass roots, cutting down trees, digging up tree roots and the like. It is estimated that every year the quantity of stalks produced nationwide is about 400-500 million tons, of which about 60-70 percent (more than 300 million tons) is burned as fuel. This method of directly burning stalks, sod and trees is not only very inefficient energy use, but in addition causes the soil to lose large quantities of organic nutrients. It is estimated that as a result of the burning of stalks, every year about 270 million tons of organic nutrients and large quantitues of the nutrient elements nitrogen and phosphorus are lost nationally. Growth of crops requires that they absorb large quantities of organic matter from the soil, and the quantities of organic fertilizer applied to the soil every year are rather small, so that the organic content of the soil has been insufficient for a long time. If this burning of stalks goes on year after year, the soil fertility will decrease steadily, and although chemical fertilizers are applied everywhere, because of prolonged rather small applications of organic fertilizers, the soil structure will be disrupted. In addition, great damage to such natural plant cover as turf and trees will result in soil erosion, so that in some areas there will be a succession of natural disasters, and the even worse result will be that good land will gradually become wasteland. This will result in a grave disproportion in the material balance between the soil and agricultural crops and will disrupt the agricultural ecological system.

If farms engage in large-scale methane production, they can bring about thorough, comprehensive utilization of the biological capacities of agricultural crops and weeds, and produce a relatively complementary and stable closed material cycle between agricultural crops and the soil. This will also preserve the relative balances in agricultural ecology.

We can see from the chart that agricultural crops which rely on the soil for growth and propagation can participate in material cycles in many forms. The first type is: soil --→ crop $\xrightarrow{\text{burning of stalks}}$ ash --→ soil. The ash returned to the soil only contains a certain quantity of potassium carbonate and the nutrients phosphorus and calcium. All the organic material and large quantities of nitrogen and phosphorus are lost. This is an unscientific, backward method of utilization. It does not unify energy and fertilizer efficiency, and if it is continued it can produce a pernicious material cycle between crops and the soil, and the agricultural ecological balance will be greatly disrupted; but at present this method is still rather widespread. Knowledge regarding rational utilization of crop stalks must be propagandized and popularized among the broad rural masses in order to bring about a change. The second form is soil $\longrightarrow$ crop $\xrightarrow[\text{natural decomposition}]{\text{direct composting}}$ soil. The returning of stalks to the soil by manmade composting and natural decomposition of stalks and weeds, so that organic matter and nitrogen, phosphorus and calcium are largely returned to the soil, is relatively effective in maintaining and increasing soil fertility, and accordingly it preserves the agricultural ecological balance. But under current circumstances, because of the lack of domestic fuel, the proportion of stalks that can be returned to the field is still very small. And in fact this method too wastes large quantities of energy and usable feeds, and is not an advanced, rational method; accordingly it must be changed. A third type of cycle is: soil $\longrightarrow$ crop (stalks, weeds) $\longrightarrow$ methane fermentation $\xrightarrow{\text{tank water, fertilizer sludge}}$ soil. This cycle involves first placing crop stalks and weeds in a methane fermentation tank to produce methane for fuel, while at the same time obtaining tank water and fertilizer sludge, thus obtaining both energy and organic matter and producing a marked improvement in the physical and chemical condition of the soil; for example, organic matter, total nitrogen and total phosphorus increase, density decreases, porosity is increased, mellow soil layers become thicker, and the structure is improved. This is a great improvement over the two previous approaches and gives rich yields of both energy and fertilizer. But if large quantities of stalks which could be used as fodder are directly introduced into the fermentation vessels, we cannot resolve the contradiction between fuel, feed and fertilizer which actually exists in the countryside. Accordingly, this is still not the most rational form of utilization of biological capabilities. The fourth form is: soil $\longrightarrow$ crop $\xrightarrow[\text{feed}]{\text{food}}$ humans, animals (livestock) $\xrightarrow{\text{manure}}$ soil. This cycle uses agricultural products and certain stalks as food for humans and feed for animals, after which the large quantities of manure produced are processed and then directly returned to the soil, increasing soil organic matter and nutrients and solving the contradiction between feed and fertilizer in the countryside; but it does not solve the fuel problem and does not make adequate use of biological energy, so that it too must be further improved. The fifth cycle is: soil $\longrightarrow$ crop $\xrightarrow[\text{feed}]{\text{food}}$ humans, animals $\xrightarrow{\text{manure}}$ methane fermentation $\xrightarrow{\text{tank water, fertilizer sludge}}$ soil. This cycle is rather rational and can make thorough use of crop products and stalks and weeds. In the process, the energy in crops is first used as food for humans and livestock, after which human excrement, livestock manure, weeds and crop stalks which cannot be used as feed are all placed in digesters for fermentation, producing methane gas as a fuel; the liquid and sludge in the digesters still preserve the great bulk of the organic material and nutrients such as nitrogen, phosphorus and potassium, which make an excellent-quality organic fertilizer. This method uses the energy in the crops several times over, and uses the plant stalks' various potentials as fuel, fertilizer and feed thoroughly and harmoniously; it is the economically most effective method of using crops, stalks and weeds comprehensively and an effective and reliable approach to preserving the agricultural ecological balance. Accordingly it can preserve the agricultural environment and greatly stimulate the development of agricultural production. In 1976, for example, Mianyang City, Sichuan, converted to methane, and the chemical fertilizer used citywide was decreased by a million jin, while total foodstuffs output was up 13.2 percent over 1975. In addition, for the last few years Wujin County, Jiangsu, has rapidly developed methane construction and accompanied it with continuous implementation of policies, and at the end of 1979 its pigpens contained 671,000 pigs, a record number. They have many pigs, much manure, much material for the methane digesters, large amounts of fertilizer and large food yields.

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STATE COUNCIL ENVIRONMENTAL GROUP PROPOSAL

OW240031 Beijing XINHUA Domestic Service in Chinese 0204 GMT 22 Dec 80

[Report by XINHUA reporter Xu Yaozhong]

[Excerpts] Beijing, 22 Dec (XINHUA)--In a recent interview with this reporter, Qu Geping, deputy director of the State Council leading group on environmental protection, put forth a five-point proposal.

Qu Geping is a permanent council member of the China Environmental Science Society and was a permanent PRC representative to the UN Environmental Agency. He has engaged in the work of environmental protection for a long time. He said: Some comrades would turn pale at the mention of environmental protection because they believe that it would cost a large amount and that since our country cannot afford to spend such vast sums, it should be put aside temporarily. As a matter of fact, this is not the case. Take, for instance, the atmospheric pollution in some Chinese cities, which is directly caused by the burning of coal. In order to use no money, or little money, to bring the environmental pollution caused by coal under control, it is necessary to readjust the energy policy. At present, we can start the work in the following five fields:

1. It is necessary to give priority to supplying low-sulphur and low-ash coal for city residents.

2. It is necessary to build centralized heating system.

3. It is necessary to make reasonable use of liquified petroleum gas.

4. It is necessary to impose compulsary use of afterheat. Most of the afterheat of urban industry has not been utilized and has become a factor of environmental pollution.

5. It is necessary to actively develop gasification of coal.

The proposal urges departments concerned to map out a plan first and carry it out in Shenyang, Lanzhou, Beijing and other cities.

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BRIEFS

JILIN WASTE WATER DISPOSAL--The first phase of China's largest waste water disposal project has been completed and placed into operation at the Jilin Chemical Industry Company. After 1 month of test runs, the project proves to be effective and all its technical standards are near or higher than the state standards. The project can dispose of 96,000 tons of waste water per day that is discharged by chemical fertilizer plants, calcium carbide plants and dyestuff plants. [SK210315 Changchun Jilin Provincial Service in Mandarin 1100 GMT 19 Dec 80 SK]

JILIN RIVER POLLUTION CONFERENCE--The Jilin Provincial Scientific and Technological Association and the Provincial Environmental Protection Bureau sponsored a national conference to assess the pollution of the Tumen River. The conference was held in Tumen Municipality, Jilin, from 5 to 9 December. [SK151347 Changchun Jilin Provincial Service in Mandarin 2200 GMT 12 Dec 80 SK]

JILIN ENVIRONMENTAL PROTECTION CONFERENCE--The national conference on environmental protection and food sanitation work of commercial departments was held from 3 to 12 December in Chungchun, Jilin Province. Participants at the conference revised and adopted the regulations for environmental protection and the regulations for food sanitation control. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 12 Dec 80 SK]

ANHUI ENVIRONMENTAL SCIENCE--The First Congress of the Anhui Provincial Environmental Science Society was held in Hefei from 17 to 21 November. Vice Governor of Anhui, Meng Jiaqin attended the congress and delivered a speech. (Fan Gehe), deputy director of the provincial environment protection bureau, delivered a report: "Get Organized, Develop Environmental Science in the Province." The congress received more than 70 academic theses and reports. It was pointed out that the tendency for environmental pollution and the wrecking of natural resources in Anhui continue to increase. The congress called for efforts to combat pollution and protect the environment in order to realize the four modernizations at an early date. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 22 Nov 80 OW]

SHENYANG SMELTERY POLLUTION CUT--Shenyang, 18 Dec (XINHUA)--Shenyang Metallurgical Plant, once one of the worst sources of pollution in this northeast China city, has halved the pollution it emits by reconstructing its smokestacks and introducing equipment to clean its waste water, a monitoring group at the plant told XINHUA. The group, which was appointed 2 years ago to clean up the smeltery, said the plant used to pour out 75,200 tons of sulphur dioxide a year, 40 percent of the city's total. Waste water, containing arsenic and heavy metals, badly polluted the soil and crops, bringing protests from local people. About 10 percent of the workers at the plant suffered from respiratory diseases and lead and aluminum poisoning. The group said that improvements made so far have reduced the monthly volume of acid smoke from 5 workshops to about 1/90th and the workshops now recover 400 tons of sulphuric acid a day. Seven other workshops at the factory, which was built in the 1930's in the city proper, have introduced an enclosed circulation system to clear toxins from waste water. So far, the group said, the system has reduced the amount of heavy metals by 30 percent to around the state standards and saved 7,000 tons of water a day. [Text] [Beijing XINHUA in English 0723 GMT 18 Dec 80 OW]

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BRIEFS

WATER POLLUTION LAW IN FORCE--Beginning on 1 January 1981 sanctions will finally begin to be applied against all organizations which have not installed equipment to purify waste water, or carried out reconstruction or technological measures to protect river water. This obligation was enacted in all republics and provinces through water [pollution] laws which were passed 5 years ago. All the laws called for a transition period for work organizations to prepare for meeting the established obligations. The deadlines, however, were extended, sometimes several times. Now when the last deadline is nearing, requests for extensions are heard again. At the 18 November press conference of the Yugoslav Council for Protection and Development of the Environment it was stressed that there are no longer reasons to extend the deadline. [Excerpt] [Belgrade BORBA in Serbo-Croatian 19 Nov 80 p 5]

CSO: 5000

COLOMBIA

OIL SPILL COVERS CARTAGENA BAY

Bogota EL ESPECTADOR in Spanish 19 Nov 80 p 12-A

[Article by Dairo Martinez]

[Text] Cartagena, 18 Nov--Agriculture Minister Gustavo Dager Chadid and Mines and Energy Minister Humberto Avila Mora will be briefed on the serious fuel oil contamination over a large part of the city of Cartagena's inner bay after a lighter carrying 3,500 gallons of the fuel from Barrancabermeja to this capital sunk there on 11 November.

The regional manager of INDERENA [Institute for Development of Renewable Natural Resources], Antonio Fernandez Atencio, traveled this morning to Bogota for this purpose; he will also deliver a complete report on the results of the investigation conducted so far by the team of biologists and chemists employed by the institute.

In the meantime, the local harbor master's office, which is responsible for taking any pertinent legal action, summoned the owner of the company Transfucol, Luis Gomez Diette, to testify. He is also the owner of the sunken lighter, and the feeling is that his testimony could provide important pieces of information for clarifying the incident.

The contract of carriage signed by Transfucol with the Colombian Petroleum Enterprise (ECOPETROL) will also be looked into, and a determination will be made as to whether the contamination policy required for the transport of fuels in maritime areas had been drawn up; such policies, however, seem to entail little liability for those engaged in maritime transport.

Meeting

Meeting yesterday, as scheduled, at INDERENA installations were Ricardo Parra and Francisco Castillo, representing the General Maritime and Ports Directorate; Jairo Escobar, the head of environmental management of INDERENA in Bolivar; Carlos Rubio and Antonio Fernandez, from the same institute; Victor Valle, from the Regional Planning Council of Northern Bolivar; Felipe Haguin, from Jorge Tadeo Lozano University; Abel Ariza, the river manager, and other officials; they met to decide what actions should be taken to halt the pollution, which has reached several beach areas.

Recommendations

They agreed on the following recommendations, which were conveyed this morning to the sectional administration for its consideration:

1. Ask the governor to urgently summon a meeting of the area advisory council for special action, pursuant to Decree 1741 of 1978, to coordinate decision-making.

2. Take immediate action before environmental conditions change and hamper work efforts.

3. Open an emergency account to begin work immediately.

4. Include representatives from ECOPETROL and Transfucol in the technical group.

5. Conduct a new survey of the area to determine how far the fuel spill has spread.

Insufficient Resources

Separately, it was learned at INDERENA that the fuel spill has spread over a 25-30 kilometer area from the site where the accident took place, because of the currents in the inner bay, and that ECOPETROL's equipment is inadequate to cope with the emergency, and thus the companies in the area have been asked to make their equipment available.

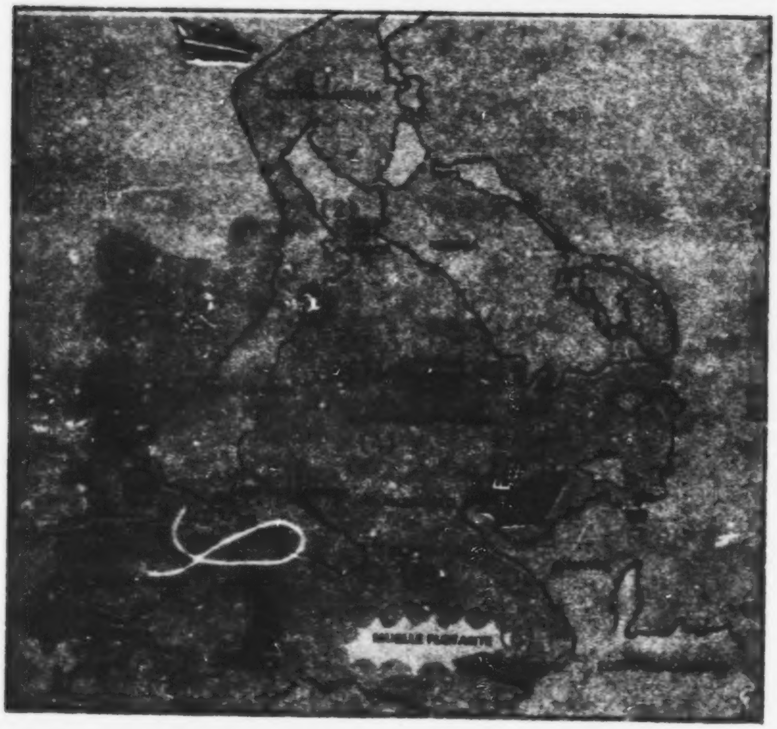
The INDERENA manager said that citizens must become aware of what is happening and in response to several criticisms by groups opposed to the stand that it has taken regarding this mishap, he stated that it is not a case of sensationalism, merely that the problem is so serious that it is impossible to conceal at present.

Serious Matter

In this regard he pointed out: "We wish it were not serious, but it is more serious than it might seem. They will have no reason to accuse INDERENA of negligence afterwards because we are doing our job."

There are apparently some groups interested in not having much importance attached to the incident, and in this regard the official said that so far decontamination work has not been undertaken and that the only efforts being made are to prevent the spill from spreading and to soak up the part of it on the surface.

The fuel oil spill that started at the ECOPETROL floating pier on 10 November as the lighter was docking spread quickly from south to north. It reached the coasts of the Manga district and even got to the Fishing Club and Naval Base, then spreading along the coasts of Castillo Grande up to the Laguito zone, where several patches have been observed.



An extensive area of Cartagena Bay has been polluted since a lighter carrying 3,500 gallons of fuel sank at the floating dock.

Key:
1. Old city
2. Fishing Club
3. Marine terminal
4. Cartagena Bay
5. Naval Club
6. Floating dock
7. Tierra Bomba Island

As of today authorities had no idea of how much fuel might have spilled into the bay, and INDERENA has asked the people working to dissolve the spill to use chemical agents only with the approval of the institute, because they could turn out to be even more dangerous than the oil spill itself.

Series of Statements

Since the investigation began, the following people have appeared before the harbor master's office: the captain of the tugboat, Nestor Rojas; Chief Petty

Officer Wilfrido Tejeda; Luis Correa, an ECOPETROL engineer; Carlos Aguirre, a Transfucol worker; a contractor by the name of Polo who was present when the lighter sunk; the first officer of the lighter, a man named Morris, and a sailor by the name of Hinestroza.

Nevertheless, the most important declaration in the investigation process is considered to be that of the ship owner, Luis Gomez Diette, the results of which are obviously being kept completely confidential.

According to reports from circles close to the harbor master's office, the causes of the accident, liabilities and blame for it are expected to be cleared up by the beginning of next week.

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MP SAID ON HUNGER STRIKE TO SPOTLIGHT SOIL EROSION

Lagos DAILY TIMES in English 16 Dec 80 p 7

[Article by Theresa Ogbuibe]

[Text] Over a week ago, an Assemblyman, Mr. Ime J. Ikpatt, representing Western Nsit in Uyo Senatorial District of Cross River State announced he was on hunger strike and would remain so until his people got help. He also said he was prepared to give up his November salary to help solve the present problem of erosion at Uyo.

In an interview with Mr. Ikpatt the question was put to him as to whether he did not think his action was a little emotional. Will hunger strike save his people? What really is the magnitude of the problem posed by erosion at Uyo? And why has he decided to take such drastic actions.

Maybe I want a message of condolence, was his reply, in a very pensive mood. You know, there is a limit to human endurance. Why should we wait to see a whole land with lives and property buried away?

What is now happening at Uyo, he went on, is worse than erosion that merely washes away the land. Uyo is a commercial town. It is inconceivable to think that the entire land and clay soil is collapsing and being buried or washed away with everything.

It is like an earthquake with a continuous irrestible force for almost a year now. Gradually, Mr. Ikpatt raised his voice and seemed more upset.

The four million naira stadium in the town is worst hit. It is now a grave pit. The College of Education that has trained eminent Nigerians may soon become a thing of the past, not to mention a vast sunk land spreading daily like a monster pit from the College of Education to Eka Street down to the Stadium and Barracks Road. Not less than 143 houses and 13 lives have been swallowed already, he said.

But the area concerned is not strictly Mr. Ikpatt's constituency, or has the interviewer got it wrong? Defending his actions and quoting the bible and the constitution to support them, the Assemblyman said anybody who knows me well will confirm that I am not sectional. Neither is my Head of State, Alhaji Shehu Shagari. Even though Uyo is not my constituency, I want this nation to know that the area affected and the gravity of the situation is causing a lot of anxiety. Emotionally speaking, only the Pharoes of the Bible could ignore the tears of his old and feeble citizens who, after spending the last of their life earnings for a place of abode to see tragedy could rejoice.

Section 15, sub section 4 of the constitution says, "the state shall foster feeling of belonging and of involvement among the various people of the federation to the end that loyalty to the nation shall override sectional loyalties."

What has the Cross River State Government done so far about the problem, or is she just sitting and waiting for the Federal Government to come to her aid? Mr Ikpatt understands that the State Government is not strong enough financially to cope with such a disaster. Even the natives have tried their best, Mr Ikpatt continued.

But what can they do in a disaster of this nature? Again, he said the constitution of the Federal Republic of Nigeria directs that the security and welfare of the people shall be the primary purpose of the government.

Mr. Ikpatt denies being a critic or an alarmist and says he is simply an NPN member from Western Insit, Etinan in Uyo, with all modesty. He thinks the President is an admirable and broad-minded man with retrospective thoughts.

"He is a very busy man," he continued. "It is our duty to remind him of things since he is not God. I am sure now that I have reminded him to redeem his promise when he sees the site.

"I am sure he will retrieve this town from further destruction and ruin. He may be shocked to know that the erosion is ten times worse than it was six months ago, during his first visit to the College of Education. There were no loss of lives then. The Assemblyman reminded the interviewer that food and shelter was the symbol of his party NPN and that it is endowed with a clay deposit best suited for bricks, ceramic and pottery industries.

Aid

According to Mr. Ikpatt the human suffering caused by erosion at Uyo is enormous. The nature of the problem is such that the state government's resources cannot meet the needs of the people without the aid of the Federal Government.

Women, children and old people are the worst hit. It has been and continues to be a traumatic experience for the old in particular, it is heart-breaking for them to sit and watch their homes and property vanish.

Mr. Ikpatt is worried that help might reach his people too late if nothing is done now to stop the erosion and rehabilitate the areas and people affected. A lot of people sometimes need emotional support.

CSO: 5000

BRIEFS

CAMPAIGN AGAINST POISONOUS FISHING--A state-wide campaign against the use of poisonous chemicals in fishing has been launched in Cross River State. The campaign which will last two weeks was jointly sponsored by the federal and state departments of fisheries. Launching the campaign in Calabar, the state Commissioner for Agriculture, Fisheries and Natural Resources, Mr. Emmanuel Umana, condemned the use of poisonous chemicals and explosives in catching fish. He pointed out that these obnoxious methods of fishing had caused indiscriminate destruction of the fish population as well as pollution of the water in which fishes breed, thereby rendering both fish and water unsafe for human consumption. The commissioner noted that about three percent of the land mass of Cross River State is covered by rivers, creeks and lakes, while the natural vegetation is too scanty to support livestock, and explained that in the circumstance, fish has not only come to occupy a prime place as a vital source of animal protein, but has also sustained the economy of the coastal and riverine population of the state. He, therefore, called on fisheries extension workers to educate fishermen on the need to increase their yields substantially and to employ natural methods in the exploitation of fish resources. [Edet Charles] [Text] [Kaduna NEW NIGERIAN in English 3 Dec 80 p 3]

CSO: 5000

BRIEFS

SOVIET SCIENTIST VISITS--A Soviet scientist of the Academy of Sciences (USSR) is currently visiting Seychelles to establish contacts with local bodies. This will enable scientists from the two countries to coordinate research, particularly the study of man and the natural environment. Professor Vladimir Sokolov, who teaches at the University of Moscow, also studies the ecosystems and evolution of islands, animal ecology and tropical forests--subjects which can form the basis of an important programme of research of great interest to Seychelles. The professor has described the Aldabra atoll as a unique place of importance not only for Seychelles but for all the world, where studies of the environment and wildlife could be made. Aldabra is a special highly protected area with an existing modern research station that has attracted many scientists from all over the world. Professor Sokolov's short trip to Seychelles includes visiting some islands close to Mahe to have a look at the local wildlife and to find out how this is protected in Seychelles. [Text] [Victoria NATION in English 4 Dec 80 p 2]

CSO: 5000

IMPACT OF PROPOSED PAPER MILL UNDER STUDY

Johannesburg THE CITIZEN in English 4 Dec 80 p 3

[Text] A DECISION on whether to establish a R500-million paper mill at Richard's Bay was imminent and the Government would, if the project was realised, consider accepting responsibility for effluent disposal, the Minister of Water Affairs, Forestry and Environmental Conservation, Dr Nak van der Merwe, said in Pretoria yesterday.

The establishment of the mill would not only be a major step in the development of the area, but would be of economic importance to the country as a whole, he said in a statement.

The effluent would be disposed of through a regional system, which would also serve other bodies in the area.

Out to Sea

His department was investigating the possibility of conveying the effluent far out to sea through a pipeline which would be equipped with an effective discharge system to ensure proper dilution and dispersal.

To ensure that acceptable standards were set for the quality of the effluents to be discharged into the sea, intensive research had been undertaken by the consultants and by the National Institute for Water Research, the National Research Institute for Oceanology, the Oceanographic Research Institute and the Sea Fisheries Institute.

Initial reports by these bodies were being studied and consultants had been briefed to produce possible designs to meet the requirements.

Tabled

Dr Van der Merwe said that if his department decided to go ahead with the project, the results of this work would be tabled in Parliament next year in the form of a White Paper.

"It is necessary to stress that the Government will impose purification standards and diffusion requirements adequate to ensure that marine fauna and flora and associated habitats are not damaged to any significant degree, and that no nuisance results to users of either the sea shore or the waters in the vicinity," the Minister said.

"Full account will be taken of all internationally accepted standards at all times." — Sapa.

CSO: 5000

BRIEFS

STORM CAUSES SERIOUS DAMAGE--On the night of 30 November-1 December there were torrential rains in Kinshasa. The raingage measured 450 millimeters. There was much damage including houses which were crushed or flooded. Others are still standing but have large cracks or are without roofs. Thus, there are now many families without shelter. In general, the houses that were destroyed were those made of earth, such as those in Lingwala, Kintambo and Barumbu. Hundreds of residences in Kintambo and Bangalungwa were constructed in the vicinity of the Makelele River which had already taken many victims before then. Everywhere people were spending the night outdoors. Even more infuriating, the electricity was out in Kinshasa that night. The outage lasted 2 days in Bandal-Synkin, and in Makala, the electricity is still out. [Excerpt] [Kinshasa ELIMA in French 7 Dec 80 p 2]

CSO: 5000

BRIEFS

TREELESS DESERT--Each Zimbabwe family was using a tree a week for firewood and poles, the Minister of Works, Mr Clement Muchachi, said yesterday when he planted a silver oak sapling in Gwelo to celebrate National Tree Day. It was therefore not surprising that the country's woodlands were disappearing. "If this situation is allowed to continue our country will soon become a desert," he said. Mr Muchachi, who planted the sapling at his Ministry's Gwelo depot, said many women already had to go long distances to find firewood. "Because we are taking trees faster than we can replace them, we need to plant new trees quickly," he said. The president of the Confederation of Zimbabwe Industries will present 3 000 trees to the Government's rural tree-planting programme when its chairman, Mr Sampson, plants a tree at the industry headquarters tomorrow. [Text] [Salisbury THE HERALD in English 9 Dec 80 p 5]

CSO: 5000

ESTONIAN SUPREME SOVIET COMMITTEE MEETS ON RESOURCE MANAGEMENT

Tallinn SOVETSKAYA ESTONIYA in Russian 26 Oct 80 p 3

[Text] A regular session of the Committee on the Protection of Nature and the Rational Use of Natural Resources of the Estonian SSR Supreme Soviet was held in Kokhtla-Yarve; it was conducted by Ye. Filatov, chairman of the committee. The address of the USSR Supreme Soviet deputies' concerning the conduct of the all-Union review of the distribution and production application of the best work was discussed; M. Vannas, deputy chairman of the Presidium of the Estonian SSR Supreme Soviet, provided the committee with information on this subject.

The fulfillment of the requirements of the Estonian SSR Code concerning mineral resources as pertaining to the comprehensive use of natural resources in northeastern Estonia was also discussed. Reports on this subject were given by the following: Kh. Lekhiste, ispolkom chairman of the Kokhtla-Yarve Rayon Soviet of People's Deputies; V. Seryn, technical director of the Estonian Production Association for the Extraction of Shale and O. Kaldre, first deputy minister of the Estonian SSR Forestry and Woodworking Industry. The committee noted that the intensive working of shale is closely related to the use of other minerals, as well as to the protection of nature. Work has been carried out on the technical recultivation and reforestation of the shale quarries.

Despite the continuously increasing attention which is devoted to the comprehensive use of natural resources, there are also substantial inadequacies in this area. A better accounting should be made for the following: water, peat, forestry materials, gravel, as well as minerals and other natural resources; the comprehensive use of these materials should be better monitored. A long-range plan for the protection of nature in northeastern Estonia is lacking.

The appropriate ministries, state committees and agencies have been instructed to eliminate the inadequacies pointed out at the session and to specify measures for the comprehensive use of minerals and natural resources in northeastern Estonia.

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ELECTRIC POWER AND NATURE CONSERVATION

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 31 Jul 80 p 2

[Article by F. Sapozhnikov, USSR deputy minister of power and electrification]

[Text] Power engineering is correctly called the basis of the bases of technical progress, the main moving force in the work to accelerate the rate of development of the national economy. However, there is no less justification for assigning our industry the number one spot with regard to its effect on the environment. In operation day and night are approximately 500 thermal electrical power stations and plants burning millions of tons of organic fuel. They are responsible for approximately one-quarter of all the harmful emissions discharged into the atmosphere by industrial enterprises.

The "Law Concerning Protection of the Air," which was adopted at a session of the USSR Supreme Soviet, requires the implementation of serious environmental protection measures in all branches of the industry. How is this work being carried out at power enterprises?

The nature protection policy of the USSR Ministry of Power and Electrification is being carried out along two general lines. The first is the improvement of the existing equipment: boilers, units, gas purification installations; and the modernization--at the appropriate times--of this equipment in order to reduce harmful emissions. The second is the development and application of waste-free and low-waste processes for the production of electrical energy.

It would seem that with the increase in the number of electric power plants their effect on the environment would also grow. But is this pattern truly inevitable? Not at all. Experience shows that at those enterprises where a sufficiently responsible attitude is taken toward this issue, the harmful influence on nature can be reduced to permissible limits.

Let us take, for example, one of the most powerful power plants, the Zaporozhskaya GRES. Four of its seven boilers operate on solid fuel, the main polluter of the atmosphere. But the collective of the plant approached environmental protection carefully and thoughtfully. The boilers were equipped with highly efficient ash traps, which are monitored 24 hours a day. The country's first automated system for monitoring air pollution was established here. A whole series of scientific sections, headed by the Moscow Power Engineering Institute imeni Krzhizhanovskiy, were enlisted in this work. Plans call for the system to go into operation during the current year.

Analysis shows that in order to reduce all indicators of the "power plant--environment" exchange it is essential to first increase the efficiency of fuel use. One way to achieve this end is to expand the combined output of heat and electric power at central heating and power plants. For this reason we adhere to a policy of centralized heat supply systems providing heat generated by major TETs to cities. This will make it possible to eliminate the multitude of small boiler houses which provide heat and which frequently produce smoke at the level of the upper stories of multistory buildings.

At the present time about 1800 cities in the nation have centralized heat supply systems. We understand that by today's standards this is insufficient. The All Union Scientific Research and Planning Institute of the Power Industry has developed plans to expand the operational radius of the centralized heat supply systems for industrial centers as Yaroslavl' and Perm', Kaunas and Tallinn, Sevastopol' and Irkutsk, Zhitomir and Prokop'yevsk. By the end of the current year about 60 percent of the heat which the cities need will be provided by central heating and power plants.

But even one major TETs pollutes the air above a city, even though it pollutes less than dozens of boiler houses. In order to meet the strict requirements for the maximum permissible atmospheric emissions, a comprehensive plan has been developed and is being applied in the field of power engineering. It includes provisions for equipping newly installed boilers with highly-efficient ash trapping units and the modernization and renovation of obsolete ash traps. The scale of this work can be judged from the following figures. The plans for 1980 called for renovation of ash traps at more than 70 boiler units and the construction of 27 new trapping units with a total productivity of 17.3 million m^3 per hour. More than 10 million rubles of capital investment have been allotted for these purposes.

The industry's scientific and planning units are doing a great deal in this area. One of the new technical discoveries is a combined ash trap, proposed by specialists from the All-Union Thermo-technical Institute imeni Dzerzhinskiy and from Soyuztekhenergo [expansion unknown]. It was developed especially for the high-ash coals of the kind that come from Ekibastuz; it provides a very high degree of cleanliness--up to 99.5 percent. The first ash trap of this kind was installed at a power unit with a capacity of 500,000 kilowatts at the Ekibastuzskaya GRES No 1.

An experimental electrofilter, developed jointly by Soviet and Czechoslovak specialists, has given excellent results in field testing carried out at the Ladyzhinsksya GRES. Plants of the Minkhimmash [Ministry of Chemical and Petroleum Machine Building] are preparing to manufacture it on a mass production basis. The application of measures to eliminate oxides of nitrogen in the fire boxes of boilers have yielded good results at a number of units which are part of the Kostromskaya, Karmanovskaya, Syrdar'inskaya and other plants. Atmospheric emissions of this toxic substance have been reduced to one-half to two-thirds of the previous levels. There are also a number of promising projects for reducing significantly the amount of another harmful component in flue gases, namely sulfur dioxide.

Much work is being done to reduce the amount of water used for industrial needs: at present the power industry consumes more water than all other industrial sectors. The main trend here is toward the establishment of closed water supply systems. This approach is being given practical realization in the plans for effluent-free power plants, some of which are already in the construction stage. This kind of system will be used at the following plants: the Novotul'skaya and Belotserkovskaya TETs's, the Minskaya TETs No 3, the Tyumenskaya TETs No 2, the Novo-Sibirskaya TETs No 5 and others. In 1980 recycled water will account for 54 percent of total water consumption. Plans call for the introduction of water recycling systems with a total capacity of 31.2 million m^3 per day at a cost of 122 million rubles.

Another acute question concerns pollution of land by ash dumps from thermal power plants. From year to year we are stockpiling on the earth's surface tens of millions of tons of ash and slag, which are the source of pollution to the soil, water and the air. There is only one way out of this: the national economy must use these wastes on a greater scale; they can be used widely in construction and agriculture.

Some good experience has already been accumulated in this area. In the Baltic republics, for example, more than two million tons of ash from the Estonskaya and Pribaltiyskaya GRES are being used annually to fertilize fields. Plans call for the industry as a whole to utilize 10.2 million tons of ash, including 7 million tons for the production of building materials. But on a national scale this is still not much. The concerned ministries, especially the Ministry of the Construction Materials Industry, must show greater initiative and persistence in solving this important problem.

On the subject of initiative, it should be said that not all enterprises of the power industry have actively joined in the work to protect the environment. The plan for the introduction of treatment facilities was only 77.4 percent fulfilled last year. And certain units show very low indicators. For example, the Azglavenergo [probably Central Asian Main Power Administration] used only 26.7 percent of the resources appropriated for these purposes.

We see the main reason for this situation in the fact that some employees view their production unilaterally; they attempt to cover up their negligent attitude toward environmental questions with "objective" difficulties. We still have enterprises which are not meeting the norms for atmospheric emissions which pollute the sky over our cities. They include the Kaliningradskaya GRES No 2 and the Volgogradskaya GRES. The ministry is taking and will continue to take the strictest measures against builders and users who fail to fulfill environmental protection requirements.

It is obvious that there now exists a need to provide a reliable economic foundation for environmental protection. I shall clarify this thought. The economic benefit obtained through a reduction in fuel consumption compared with the established norms can be calculated with accuracy down to the ruble. But what can be done when the subject is the protection of nature? Our institutes are presently working on industry-wide methods for calculating the economic benefit of measures to protect the air from harmful power plant emissions. But the practical application of these methods will depend on the development of the Union-wide criteria for the effectiveness of these and other environmental protection measures.

A special board for the protection of nature was recently established within the system of the USSR Ministry of Power and Electrification for the purpose of guiding, organizing and coordinating projects for the protection of the air and water. Its functions include the planning of all the environmental protection activities of the ministry, the implementation of departmental monitoring of the observation of legislation in this area and the fulfillment of decisions made by directing organs.

Measures have also been taken to strengthen the scientific base. The All-Union Thermo-technical Institute imeni F.Z. Dzerzhinskiy, which has been named the leading institute on this subject, has created departments for the protection of the air and water against effluent from electrical power plants. A section concerned with environmental protection has been formed for the systematic publication of information materials dealing with the best experience and the achievements of domestic and foreign science and technology in this area.

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NERO LAKE POLLUTION REEXAMINED

Moscow PRAVDA in Russian 24 Sep 80 p 3

[Article b y Z. Gagarina, reclamation engineer of the oblispolkom agricultural administration, P. Smirnov, honored agronomist of the RSFSR and B. Khokhlov, candidate of agricultural sciences, Yaroslavskaya Oblast': "How Can the Lake Be Helped?"]

[Text] Seven years ago PRAVDA wrote about the problems of Lake Nero, which is near Rostov (Velikiy). The article discussed the shoaling of this major body of water, and the large-scale silting which has taken place here; up to 200 million tons of sapropel have accumulated on its bottom. This has reached the point where the basin of the lake can no longer hold all the waters of spring; they flood thousands of hectares of the surrounding lands. Valuable meadows become swamped and the grass cover deteriorates. It is not uncommon for fish to die of asphyxiation in winter. Due to the proximity of the water, specialists fear for the unique Rostov landmarks.

Over a period of years the Yaroslavl' CPSU Obkom and Oblispolkom have posed to the appropriate organizations the question of restoring the entire zone and of removing the sapropel from the lake: for centuries the sapropel was used by the Rostov vegetable growers as fertilizer. In 1971 the Rosgiprovodkhoz [Rostov State Design Institute for Water Management] Institute prepared the technical and economic groundwork.

How did they intend to help the lake at that time? By deepening it and removing the accumulation of silt. The plans called for a broad reclamation program for the surrounding lands, for the establishment of drainage systems and pumping systems.

However, this plan was forgotten, and the solution to an important problem was put aside for long years. But did the problem really lose its urgency? No; the agricultural economy of the oblast essentially depends on the condition of Nero.

"The lake must be cleaned up no matter what," say the employees of the Rostov CPSU Gorkom. There should be no further delay.

But why has that which was planned remained undone? It turns out that the reclamation specialists who were in charge of implementing the plan came to doubt the correctness of the chosen path. And then the planners received new assignments, and new documents were born. But if the earlier plans arouse optimism, the later versions arouse concern.

Here are two documents: "A General Plan for the Comprehensive Use of Land and Water Resources of the Lake Nero Basin," which was prepared by Rosgiprovodkhoz in 1974, and technical and economic documentation for the construction of a water reservoir for farms which cultivate onions, which was prepared by Mosgiprovodkhoz [Moscow State Design Institute for Water Management].

What attracts attention first of all? In both cases the plans call for the lake's volume to be increased not by removing the sapropel but rather by erecting retaining structures. This is being done despite the statements by a number of scientists that raising the water level of the Nero is not to be permitted, as it will lead to a deterioration of the underground water flow and to erosion of the soil. The matter is complicated by the fact that the level of the ground waters here is high even without this. And with irrigation it will rise still more, and within 10-15 years it will reach a critical mark--about a meter from the surface of the earth.

The question arises: is it necessary to raise the lake above the floodplain and thus to shut our eyes to the obviously unfavorable results which this measure imposes on nature? It would seem that another path should be taken; stricter account should be taken of the 25th CPSU Congress requirements concerning the need to improve prognoses about the influence of production on the environment and to take into consideration its possible consequences when preparing and making planning decisions.

This kind of approach is especially important with regard to Lake Nero, which has a rare combination of favorable factors: a good supply of water from numerous rivers and streams and a sufficient outflow through the Veksa-Kotorosl'. This entire system represents a natural hydro-network. In addition, the lake has a bottom which is impermeable to water; it also has gently sloping banks, which are not prone to collapse, a large surface area, which simplifies the construction of water regulating installations. The proximity of irrigated lands is also important.

A careless step should not be taken, lest this entire complex worked out by nature herself be disturbed. Large areas of good bottom land will be buried under dams; the natural beds or rivers will disappear. Fish spawning grounds and reserves, as well as other wildlife sanctuaries will be eliminated.

Moreover, the plan is hardly justified from the point of view of expense. It calls for very expensive hydro-technical installations. It includes great expenditures for necessary auxiliary construction unrelated to the reclamation: the building of dams to protect Rostov and Porech'ye-Rybnoye from flooding; the laying of drainage and sewage networks in Rostov, the organization of a fish hatchery on the lake due to the destruction of natural spawning grounds, etc.

And one no less important factor: the proposed irrigation-drainage systems are labor intensive and expensive to operate. Annual operating expenditures will exceed 9 million rubles. The plans call for the installation of about 160 pumping stations and the initial operation of 667 pieces of irrigation equipment. The electrical transmission lines alone will extend for 359 kilometers. Of course, for some people it is tempting to be able to carry out this kind of gross volume of work. However, the use of such a large amount of equipment is, in our view, not sufficiently justified. Moreover, 1,380 people will be needed to service this armada of machines.

This cannot all be dismissed. But perhaps it is agriculture which will turn up in the winning position? No, the prognoses sound pessimistic: with the rise in the water level of the lake and the flooding of the bottom land, the conditions for the cultivation of onions, which are the main crop in this area, deterioriate. Fearing the water, the farmers are forced to leave the sectors which are rich in humus for the podsolized soils located higher up. It is true that the plan promises that the expenditures will produce a significant yield: in 1990 the production here will be 80,000 tons of onion and 40,000 tons of chicory. Grain yields will grow, too. At the same time, however, the area cultivated with vegetables other than onions will be reduced to one-sixth the present level, and the area under potatoes will be reduced to one-half the present level.

When one weighs all the pro's and con's, one immediately thinks of the simpler and less expensive solutions which were developed, discussed and not adopted. One of the reasonable solutions, it seems to us, is to set out in the conclusion of the experts' section of the Yaroslavl'sovkhozvodstroy [Yaroslavl' Oblast State Farm Administration for Water Resources Construction] management. It proves by means of calculations that there is no need to increase the volume of Lake Nero by increasing the water level of the lake. Even the present volume of the basin provides for the accumulation of the necessary amount of water for irrigation. It is only necessary to improve the circulation of the lake; and this requires that the Veksa-Kotorosl' bed be deepened. Convincing evidence is also provided for the advisability of gradually removing the sapropel from the bottom of the lake; the unacceptability of the plan to raise the level of the lake through the use of dams is also emphasized. This conclusion is based on the proposals of 17 various organizations.

A similar viewpoint was shared and supported in its time by an expert committee of the Council of Technical Expertise of RSFSR Gosplan, under the chairmanship of I.S. Shatilov, academician of VASKHNiL (All-Union Academy of Agricultural Sciences imeni Lenin) and B. B. Shumakov, corresponding member of VASKHNiL.

But what has happened? These remarks were ignored by Mosgiprovodkhoz. Nor were conclusions drawn from the experience of the obviously unsuccessful planning of reclamation projects in the Kotlovina basin; the ecological relations of many components of the natural complex were not taken into account at all there.

And there are instances such as these: the reclamation systems built according to Rosgiprovodkhoz plans proved in significant measure to be unsuitable for use. The drainage networks were first rejected for 2,000 hectares, then for an area of 6,500 hectares. Of the drainage systems which have been retained, (and these cover somewhat more than 6,000 hectares), the systems developed for 4,500 hectares are being reorganized. The main flaw of these reclamation installations is the negative influence on the ground water regime.

Thus there are reasons to analyze carefully the effectiveness of the planners' work and the quality of the documents which they provide. Unfortunately, this is not yet being done.

In the meantime the danger of a new reclamation option for the Nero basin exists. Although the technical-economic documentation has not yet been confirmed, its rough draft is already being implemented: more than 60 different facilities are being built at a total cost of about 50 million rubles. Research and planning work is being carried out.

The situation is highly paradoxical: the document must still be passed by state experts, it prompts a mass of objections and reprimands but, nonetheless, everything in the document is given the "go ahead."

What is the position of the Yaroslavskaya Oblast organizations on this important question, which by no means concerns reclamation alone? The position could be more consistent. Previously they were completely in support of the plan to deepen the lake, but now they have agreed to the latest Mosgiprovodkhoz scheme. Possibly it is worth studying more thoroughly and taking greater account of the conclusions and ideas of the specialists who know the local conditions.

It is true that the solution of the problem has, indeed, been dragged out. But this does not provide a reason for agreeing to any option at all. This kind of position would not appear to help the matter. The fate of the Nero is not a trivial matter, and it would be a big mistake to fall under the influence of those who see only the technical side of the problem and who forget about the kind of lake (one that has become more beautiful or one which has become disfigured) it will be when this pearl is handed down to future generations.

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LAKE SEVAN CONTROL MEASURES

Yerevan KOMMUNIST in Russian 14 Sep 80 p 3

[Article by V. Sarkisyan, main engineer of the Yerevan Hydrometeorological Observatory of the Armenian Republic Administration for Hydrometeorology and Monitoring of the Natural Environment: "Preserve the Riches of Sevan"]

[Text] The pearl of Armenia is the Sevan, the world's highest major fresh water lake; it has attracted lovers of nature since ancient times.

The main wealth of Sevan lies in its water resources. Thanks to its purity, transparency and high taste qualities the lake's water was used--until recently as drinking water by the local residents. With the help of Sevan waters arid lands, including not only those which surround the lake but also enormous areas of the Ararat plain, have become flourishing orchards and fruitful fields.

The waters of the rivers which flow into the lake and of the lake itself are widely used at the present time to meet irrigation needs and to provide industrial and residential water supplies.

However, the basin of Lake Sevan is one of the most intense sectors of limited water use in Armenia. During the summer and fall periods the majority of the rivers which flow into the lake either dry up or the water is completely diverted for economic needs.

The demand for water has been especially noticeable this year as a result of the dry weather and the dehydration of the soil in certain regions; it also results from the low water level of the republic's rivers.

For this reason there is a question which is more acute now than ever before, concerning the conduct of comprehensive investigations to determine the optimal level of water in the lake, ways to preserve its qualities and to use rationally and reproduce the natural riches of its basin.

But how is water used and water use monitored at the present time?

There are in the basin of the lake about 45 interfarm and 100 intrafarm sovkhoz and kolkhoz canals and irrigation ditches, as well as 10 pumping stations which help in the irrigation of agricultural fields. The Ministry of Water Resources draws up a plan for the irrigation period; the plans specify the amount of water to be drawn from the rivers by each canal and irrigation ditch. The amounts are determined on the basis of water norms for fields growing various crops.

The metering of water in intrafarm canals is carried out at an extremely low level of accuracy. And, indeed, how can one talk about accuracy when the canals either have no measuring devices at all or unsuitable ones? Spillways have been ruined, and gages to measure the water level have been often incorrectly installed or not attached at all. There exist numerous "secret" pumping installations and irrigation ditches built by private individuals to water their own kitchen gardens.

The larger interfarm canals, which are the basic water intake installations, have concrete spillways to measure water consumption. Here, too, water is not drawn according to the plan. Nearly everywhere water flows through the canals in amounts greater than stipulated by the norms. For example, the plan called for the Adiamanskiy Canal to draw 470 liters per second from the Argichi River in one month, but when the intake was monitored, it turned out that 1,800 liters per second were being drawn. At Metsara 215 liters per second were being drawn rather than 120. At Yarpuzlui-aru 435 liters per second were being drawn instead of 30; at Sariara 430 liters per second were being drawn instead of 315, etc.

What is the reason for this water consumption which exceeds the norms? We ask this very question of the directors of the irrigation system administrations. They answer: "It lies in the poor repair state of the water intake installations." They explain that interfarm canals lose about 50 percent of the water through cracks in the concrete foundations and walls, while intrafarm canals and irrigation ditches, which are primarily made of earth, lose even more--65 to 70 percent.

More resources are being spent to repair and restore water-intake facilities; however, the effectiveness of the results has not been seen yet.

A walk along the roads of built-up areas, especially at night, makes it possible to see what happens to this "ownerless" water after the fields and gardens have been watered. Some of the water, having run a relatively long course, in the end flows into the lake, but most of it infiltrates into the deep layers of the soil, and this creates new swamp areas and increases old ones.

Nor are spring waters used here as they should be. At a time when the republic has an acute need for drinking water, a subject on which the newspaper KOMMUNIST has written more than once, many springs of the Lake Sevan basin are used for irrigation. There are, for example, the Akunskiye springs with a total output of about 1,200 liters per second. The Yarpuzluyskiye springs, with an output of 1,500 liters per second are used for irrigation.

But how do matters stand with regard to waste water in this region?

The Sevan basin has more than 50 industrial and public utility enterprises, the city of Kamo, the settlement of Martuni and the rayon center of Vardenis, as well as other settlements. Their waste water is discharged into the lake, about 30,000 m^3 per day. An inspection has established that the water intake installations of industrial and public utility facilities do not have water-measuring devices nor do the waste water discharge points have flowmeters.

The waste water of the Martuni settlement is not fully treated, and nearly 40 percent of it (and all of it in the evening hours) goes into the Martuni River without treatment and from there into the lake, causing damage to its fauna and flora.

Six biological and 14 preliminary treatment facilities with a total capacity of 9,000 m^3 treat 4,000 m^3 of polluted waste water per day. Thus, every day about 26,000 m^3 of polluted waste water goes untreated into Lake Sevan and the rivers which feed it.

Enormous resources have been allotted recently for the preservation of the level and the establishment of the biological equilibrium of the lake. Construction is being completed on facilities to divert part of the flow of the Arpa River into Lake Sevan; the diversion of water for power purposes has been halted.

However, the measures being taken will prove inadequate if the organizations concerned with the solution of Sevan's problems, the Ministry of Reclamation and Water Management, the industrial enterprises of the city of Kamo, the cheese plant at Martuni and others, do not contribute to the rational use of the lake's water resources and fight to prevent its pollution.

Sevan is a landmark of nature; it must live at all its beauty for the good of our present and future peoples.

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12 August 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 319

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WORLDWIDE REPORT

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BRIEFS

AFFORESTATION IN KULEKHANI AREA--Kathmandu, July 11--Assistant Minister for Forest and Soil-conservation Deep Bahadur Singh initiated afforestation programme at Dadagoan Dam Site in Kulekhani Village Panchayat on the occasion of the forest festival today, reports RSS. Officials of the Forest and Soil-conservation Ministry and Kulekhani Hydel Project and local panchas participated in the programme. Thirty-five thousand different variety of trees will be planted in fourteen hectares of land at the site under the week-long programme, it is learnt. There is a programme to plant about fifty-three thousand trees in twenty-one hectares of land in Chitlang and Kulekhani Village Panchayat areas this year. It is expected that the afforestation will help flood control and soil erosion in the Kulekhani hydel power project area. [Text] [Kathmandu THE RISING NEPAL in English 12 Jul 81 p 1]

CSO: 5000/4927

PROGRESS ON POLLUTION CONTROL IN BEIJING DESCRIBED

Beijing Lumber Mill

Beijing BEIJING RIBAO in Chinese 5 Jun 81 p 2

[Article by Jin Ruilian [6855 3843 5571] and Lou Yaohua [1236 5069 5478]: "Beijing Municipal Lumber Mill Develops New Vacuum Cleaner and Solves Sawdust Pollution"]

[Text] The Beijing lumber mill has built two sets of a "two-stage bag-type vacuum cleaner" device which has effectively solved the pollution of sawdust and changed the past practice of shifting pollution from one place to another.

Ever since this plant began mechanized processing of lumber in the early 1950's, sawdust pollution had been a bad problem which had seriously jeopardized the workers' health. In 1958 the plant acquired a dust vacuum and regularly vented outdoors the sawdust around the workplace. Although this improved conditions in the shop, the sawdust that was sucked out polluted not only the plant grounds but also the nearly residential area. In the spirit of the four directives of the Central Committee Secretariat, and based on taking a responsible attitude toward the people's health, the plant in 1980 formed a team to develop a new dust vacuum cleaner. After more than 4 months of experimentation, the "two-stage bag-type vacuum cleaner" was successfully developed last November. This vacuum device uses a dust extractor in the first stage of handling the sawdust and separates the larger pieces. A "bag" is then used in the second-stage process of [handling] the sawdust and the regular dust; the sawdust is fed into a sawdust tower, while the regular dust is fed into a closed dust-fallout room. This new vacuum cleaner is 97 percent efficient and has had good results in service. It has fundamentally solved sawdust pollution to the environment indoors and outdoors.

Woolen Shirt Factory

Beijing BEIJING RIBAO in Chinese 5 Jun 81 p 2

[Article by Tang Naihui [0781 0035 1979]: "Beijing Woolen Shirt Factory Builds Pollution Control and Main Body Engineering Simultaneously"]

[Text] The Beijing woolen shirt factory is building pollution control facilities simultaneous with plant construction and has achieved concurrent sewage treatment and product manufacture.

Located in the northeastern suburbs of the capital, the Beijing wollen shirt factory is a newly constructed woolen textile mill that has the capacity for spinning, knitting, and dyeing. According to the designed production capacity, this plant will dump 600 to 700 tons of highly polluted sewage every day. At the outset of plant construction, the Textile Bureau and the company both made it clear that if the wastewater was not treated well, the dyeing and processing shop would not be allowed to start up. The factory paid great attention to pollution-control work and made it the exclusive responsibility of a deputy director. A wastewater management team consisting of leading cadres, workers, and engineering technical personnel was organized. With the assistance of students and instructors of the Water Supply and Drainage Department at Qinghua University, "biological turn disk" and "chlorine discoloration" methods of treatment were decided upon after investigation, research, and scientific experimentation. In order to move the progress of the water treatment engineering project ahead of the production of the dyeing and processing shop, the factory's power department in charge of water treatment moved full speed ahead and ensured that the construction would progress normally. Once the sewage treatment facility is put into operation, the treated wastewater will meet national emission standards, and the simultaneous design, construction, and production of pollution control and main body engineering will be realized.

Beijing Airport

Beijing BEIJING RIBAO in Chinese 5 Jun 81 p 2

[Article by Song Yunxiao [1345 0061 7197]: "Beijing Airport Controls Pollution During Expansion Construction"]

[Text] Being sensitive to overall considerations, Beijing Airport has made serious efforts to control pollution during its expansion construction and achieved good results.

The recent expansion engineering project of Beijing Airport was fairly large, and after expansion the amount of production and human sewage released by the various units was to be three times the previous level. If this sewage were released directly without treatment, it would cause pollution in Wenyuhe. The airport leadership realized the seriousness of the problem and decided to implement the national regulations thoroughly by putting great efforts into sewage treatment during expansion construction. The Beijing Municipal Institute of City Design and construction workers responsible for the project worked hard for several years and finished a sewage treatment area that treats 10,000 tons of sewage per day at the same time that the first stage of the expansion project was completed and put into operation. After precipitation and biological gas exposure treatments, the water quality of the sewage has been found to meet the national emission standards. However, the sewage treatment area must release a certain amount of sludge that is contaminated with bacteria and hazardous material. If this sludge is not treated, it can also cause pollution. Based on the spirit of being responsible to the people, the airport built an integrated utilization facility to treat the sludge and produce methane gas. The treated sludge can be used as agricultural fertilizer, while the methane gas produced can be used in the boiler room at the sewage treatment grounds and as fuel in kitchens.

9698
CSO: 5000/4080

BEIJING VIRTUALLY COMPLETES INTEGRATED WATER SUPPLY, DRAINAGE SYSTEM

Beijing BEIJING RIBAO in Chinese 22 Jun 81 p 1

[Article by Wang Yonghua [3769 3057 5478] and Xie Lianshan [6200 6647 1472]: "City Has Virtually Completed Construction of Water Supply and Drainage System To Win Victory Over Two Consecutive Years of Severe Drought and Assure Bumper Agricultural Harvests and Water for the City's Use; Numerous Water Conservancy Projects Completed Since Founding of People's Republic"]

[Text] As of June, the Beijing area has had 23 consecutive months of drought such as has not been seen in 100 years. Total precipitation last year amounted to 55 percent of the average amount for many years, and again this year it has been "scant rains and passing winds," as the drought seems to intensify. Nevertheless, in a year of great drought, there has been no great decline in production. Last year the city's agriculture had a great bumper harvest, total grain output surpassing all-time high records. Electric power, steel, and other industries that consume large quantities of water maintained normal production, and the lives of the people in cities and towns were unimpaired.

This good situation is directly attributable to the great accomplishments on the city's water conservancy battlefront. In the 32 years since founding of the People's Republic, the city has built 84 large, medium, and small reservoirs with a capacity totaling 7.2 billion cubic meters under the brilliant leadership of the party. It has also built 53 large and medium water gates, 44 irrigation areas of more than 10,000 mu, has machine-equipped more than 35,000 wells, has set up 6,300 pumping stations, and built more than 480 dams across streams. It has built 84 hydroelectric power stations with a total installed capacity of more than 28,500 kilowatts. It has built the Yongding River water diversion and the Jingmi water diversion projects, great arteries for supply of water to the capital city, which total 230 kilometers in length. It excavated and dredged more than 670 kilometers of drainage ditches for the prevention of floods. Throughout the city, a rather complete water supply and drainage system has been substantially built.

Beijing, located on the northern fringe of the North China Plain, is an arid region in which the distribution of precipitation is extremely uneven. Not only does the quantity of precipitation differ from noe year to another, but there are very great variations in the seasons as well. In most years there is spring drought and autumn floods. In this capital city with a history approaching 1,000 years, even though successive dynasties of rulers built some water diversion and flood prevention projects in order to maintain their rule, they never solve the problem of drought disasters. Up until the time of Liberation, the city of Beijing was dependent on a single watercourse running from Yuquan Shan carrying spring water into the city. It supplied only 100,000 cubic meters each day. At that time, bodies of water such as Shishahai, Beihai and Zhongnanhai lacked adequate sources of water and were stinking and filthy places that propagated mosquitoes and flies. The water in Shishahai was so shallow, rice could be grown in it. The Yongding River, on the other hand, frequently flooded causing calamities and bringing untold hardships for the people on both its shores. Within a month after the founding of New China, the CCP Central Committee decided to build the Guanting Reservoir. Between 1952 and May 1954, China's first large reservoir, the Guanting Reservoir, was victoriously completed. From this time forward, the unbridled havoc-wreaking Yongding River generated electricity, irrigated, and provided water to the capital, and created wealth for the people. Next, the Shisanling, Huairou, and Miyun reservoirs were also completed one after another. Party and leadership comrades including Mao Zedong and Zhou Enlai personally visited these reservoir worksites on numerous occasions to examine design programs, understand the projects, and join in labor at the worksites.

The capital's water conservancy construction greatly strengthened the capacity of the suburbs to fight drought and drain away flooding, promoting development of agriculture, forestry, animal husbandry, and fisheries. The irrigated farmland area of the suburbs expanded to 5.11 million mu, a 23 fold increase over the period immediately following Liberation. Thanks to assured water resources, industrial and urban construction also developed. Since the time of their construction, the two large reservoirs have supplied more than 40 billion cubic meters of water to industry and the city. Currently the city's water conservancy resources are unable to keep up with the needs of development of the four modernizations; water for the use of industry and agriculture is in fairly short supply; and some weak links exist in flood prevention and the draining away of flooding. This will require continued strengthening of water conservancy construction and management.

9432
CSO: 500/4085

MORE EFFORTS URGED TO PROTECT ENVIRONMENT NOW

Guangzhou HUANJING [ENVIRONMENT] in Chinese No 5, 30 May 81 pp 2-3

[Article by Wei Zonghua [7614 1350 5478] of the Environmental Protection Office of the Ministry of Metallurgical Industry: "Much Can Be Done To Protect the Environment During the Readjustment Period"]

[Text] In the current national economic readjustment period, some of the comrades engaged in environmental protection work take the view that since the state has cut back on the capital construction front, environmental protection work cannot get going and there is not much that can be done about it. Is readjustment strengthening or weakening environmental protection? Is it beneficial or detrimental to environmental protection? Practice at Shengyang refinery provides answers to these questions.

Shengyang refinery is an old plant built in the 1930's that was notorious for polluting in the northeast. Pertinent departments warned the refinery long ago that it would be booted out of Shengyang City if it did not make a serious effort to control its pollution. Whenever pollution control was discussed in the past, officials at the refinery could only think in terms of large-scale rebuilding and remodeling, and they requested that the authorities allocate 60 million yuan for it. In 1979, they consulted domestic and foreign advanced experience, took measures to strengthen production technology management and economic management, and promoted environmental protection work. They have not only stopped releasing substandard sewage and avoided paying pollution fines, but they have also recovered sulphur dioxide from the waste gas in order to produce sulphuric acid. They produced 88,000 tons of sulphuric acid in 1979 and 113,000 tons in 1980. Moreover, their production level continued to grow in those 2 years: the value of production grew an average 7 percent annually, and the gross production value increased 11.4 percent. During 1979 and 1980, the refinery completed 16 environmental protection engineering projects in conjunction with a major remodeling. Out of the total investment of 15.13 million yuan, the state invested 2 million and refinery [officials] raised 13.13 million yuan on their own. In other words, Shengyang refinery linked production development, renovation, and improvement funds, major remodeling funds, and integrated utilization profits in its environmental protection work.

When we asked the plant director why are they doing this, he said: "The major problem we are facing is environmental protection. If we don't protect the environment, our plant will no longer be in a position to continue to exist." Some people often say that since production is tight and money is scarce, where do we get the power to protect the environment? Changes at Shengyang refinery have refuted this argument. And this is the microscopic example of one plant.

From the larger view of things, the Ministry of Metallurgical Industry in the past worked on environmental protection for the sake of environmental protection and tried to simply control the "three wastes." They spent much effort without achieving any pronounced effect. Since the national economic readjustment, we have begun to combine environmental protection with production and to think about how we can change the direction of metallurgical production. For instance, how can we make the growth rate of rolled steel faster than that of smelted steel and make smelted steel grow faster than smelted iron? That is to say, in the production of 1 ton of rolled steel, if the amount of cast iron required can be greatly reduced, the energy consumption and hence the pollution can both be reduced. The Ministry of Metallurgical Industry is a big consumer of energy. More than 70 million tons of standard coal are consumed for steel and iron alone every year. The ministry made a great effort the previous 2 years. In comparison with 1978, 1.11 million tons of coal were saved in 1979; yet steel production increased by 2.7 million tons. Coal consumption did not increase in 1980, but steel production increased by 2.6 million tons. In 1980, the coal consumption per ton of steel in major enterprises was 100 kilograms less than the 1979 level. In other words, the amount of smoke and gas released into the atmosphere by the metallurgical industry in 1 year decreased by about 30 billion cubic meters. As for the production structure, in 1980 we shut down, stopped, combined, or transformed a number of small steel mills that had a high energy consumption, high costs, and serious pollution problems. This year all small iron mills that consume more than 800 kilograms of coke per ton of iron and that cost more than 250 yuan will be shut down. This will greatly reduce the sources of pollution and will improve the environmental picture of the metallurgical industry.

Since the environmental protection problem accompanied modern industrial production, it must be solved step by step through economic development. Our past efforts of isolated "three wastes" management actually amounted to not seeing the forest for the trees. Only when environmental protection work is combined with production and integrated into the entire industrial system and into the production of the enterprises can it develop along with economic construction and be mutually promoting. It is therefore my belief that the period of national economic readjustment is favorable for us to adjust the unharmonious relationship between production development and environmental protection. We should make use of this golden opportunity to strengthen the basic work of environmental protection. Pessimistic arguments are unfounded.

9698
CSO: 5000/4081

CHINA'S FIRST REMOTE SENSING OF ENVIRONMENT DESCRIBED

Guangzhou HUANJING [ENVIRONMENT] in Chinese No 5, 30 May 81 p 8

[Article by Zhang Shuyi [1728 2579 5030] of the Tianjin Municipal Environmental Protection Bureau: "China Has Conducted Its First Environmental Remote Sensing Test"]

[Text] An enormous "composite city map by infrared scan" recently appeared on the wall in the big hall of the Tianjin Municipal People's Government. This map provides visitors with an overall view of the coastal city, and it is one of the encouraging achievements of China's first environmental remote sensing.

What exactly is environmental remote sensing? We have all heard about the many specific measurements and detections of the earth's surface and the surfaces of other planets by airplanes, artificial satellites, and spacecraft using photography, radiowaves infrared, laser beams, and so on. This is the remote-sensing technique. When remote sensing is used to monitor the environment, it is called environmental remote sensing. From spring and summer to the winter of 1980, 49 units, including the Chinese Academy of Sciences and the State Environmental Office, collaborated in China's first large-scale integrated scientific experiment based principally on environmental monitoring over the urban area of Tianjin and the Bohai Bay area. The experiment, known as the "Jin-Bo region environmental aerial remote sensing tests," yielded good results.

This environmental remote sensing is based mainly on regional scanning and infrared photography by airplanes flying at an altitude of 600 to 1000 meters. Thousands of infrared images of 1/5000 and 1/10,000 ratio are then superimposed, synthesized, and analyzed to obtain a clear picture of the environmental conditions of the atmosphere and water and the pollution sources in the Tianjin-Bohai Bay area. Simultaneous with the flight observations, synchronous measurements of ground object spectroscopy, thermal radiation characteristic observations, and water chemistry sampling were also carried out on the ground and in Bohai Bay. In certain sectors of the city, samples of atmospheric floating dust and of sulphur dioxide, as well as gas-dissolving gel vertical samplings, were also taken. In Bohai Bay, experiments on petroleum pollution diffusion, red tides, and chlorophyll content were carried out, and great volumes of pictures, data, and samples were systematically taken. If conventional methods had been used, it would have been difficult to obtain this information even with many years' work.

The recent environmental remote sensing has had many achievements. First, major pollution sources in the area are clearly indentified. The "hot islands" of industrial zones and the thermal pollution of steel mills are all graphically displayed. A certain petroleum refinery had hidden its pollutant outlet underground and had escaped attention for years, but that too is revealed under the observant eye of aerial remote sensing. Second, the pollution conditions in the atmosphere and water are revealed graphically and instinctively. The white color representing dust pollution and the dark blue color representing the diffusion of ground sewage in the bay are all clearly displayed. Moreover, these pictures also reflect the anomalous pollution of suburban agriculture and the green areas, traffic, and buildings of the city, thus providing a scientific basis for urban construction and management. After this environmental remote-sensing activity, people have further come to realize that remote sensing is indeed the modern ears and eyes of environmental protection, and that it is really a handy tool for carrying out environmental monitoring and quality evaluation and management of the environment.

9698
CSO: 5000/4081

GOVERNMENT WITHDRAWS 7,000 HECTARES FROM NATIONAL PARK

San Jose LA NACION in Spanish 17 Jul 81 Sec A p 8

[Text] By virtue of an executive order, the government withdrew 7,000 hectares from the Palo Verde National Park, despite strong opposition to that measure from the various conservationist groups.

Unofficial reports which came to the attention of the conservationists several days ago disclosed that some 4,000 hectares were to be withdrawn from the park.

However, the measure adopted by the president of the republic, Rodrigo Carazo Odio, and the minister of agriculture, Dr Hernan Fonseca Zamora, stipulates that the area to be withdrawn will consist of 7,000 hectares.

Yesterday, the conservationists announced that they would bring administrative legal action against the state to prevent the withdrawal from the park.

They would base that suit on the fact that (according to the view of the attorneys advising them) national parks can undergo withdrawal only through the passage of a law.

It was learned that engineer Mario Boza, President Carazo's adviser on national parks, will resign from his position in reaction to the reduction in the park area.

His close friends claimed that he has at his residence the letter of resignation from his post, and that he will submit it to the president, possibly upon his return from a visit that he is making to the Cahuita area.

Until 2 days ago, the Palo Verde National Park consisted of 9,466 hectares of dry tropical woods, unique in the Central American area; which are also visited by thousands of species of migratory birds during various seasons of the year.

In accordance with the new decision, the park will be comprised of only 2,440 hectares.

Decision

The executive branch made the decision to reduce that park on the basis of a declaration from the Office of the Attorney General of the Republic.

The declaration was prepared by Manuel Freer Jimenez, the third prosecutor of the republic, after receiving a legal opinion from Ana Maria Tato, legal consultant for the National Parks Service.

The document from the Attorney General's Office states that this park consisted of land which belongs to private individuals, and which could not be paid for by the state.

Freer Jimenez remarked that, according to the local legislation, privately owned land cannot "be held legally as an integral part of a national park, unless it is purchased or expropriated by the state."

He added: "If private land which the state does not wish, or is not able to purchase or acquire through expropriation,is included in an order for the creation of a national park, such land may be excluded from the boundaries set for the respective park, and that exclusion may be made through an executive order."

Order No 12765-A, which was published in the Official Journal yesterday, declares that the state will acquire a piece of property consisting of 2,440 hectares, by virtue of a legal instrument executed in the presence of the state notary's office.

It adds that this property guarantees fulfillment of the conservation goals which had prompted the decision to create the park, "because, not only are the 900 hectares of mangrove thickets and ponds protected, but a suitable additional setting is provided for them."

This assumption was repudiated by the conservationists, who consider it necessary to keep in the state's possession not only the 2,440 hectares described in the decree, but also the other 7,026 hectares, as was originally stipulated.

Reaction

Alexander Bonilla, an official of the Costa Rican Association for the Conservation of Nature (ASCONA), commented that the government's decision is a setback in the conservation of natural resources.

He said that this cut would evoke a series of national and international reactions, because the Organization of American States (OAS) and the United Nations (UN) have been requested to make a declaration against the reduction.

Similar declarations have also been asked of the conservationist organizations of Central America and Europe.

Moreover, the declaration by the Office of the Attorney General of the Republic prompted Ana Maria Tato to request of that institution a reconsideration thereof.

In doing so, she gave a reminder that, some time ago, Costa Rica ratified the Convention for Protection of Flora and Fauna and the natural scenic beauties of the American nations; and that this regulation notes that the boundaries of national parks are not to be changed, nor any part of them transferred, except through action by the legislative authorities.

She recalled that this convention holds a superior status in the legal code, and therefore should be complied with.

With regard to the proposition that privately owned land cannot be legally held as an integral part of a national park, unless it has been purchased or expropriated, the attorney remarked:

"That runs counter to the provisions of Article 71 of Law No 4461, which affords the possibility that privately owned woods or land considered essential to serve the purpose of establishing a national park may be subjected to the forest system, on a compulsory basis; and, in the event that the owners refuse to abide by that system, steps will be taken for expropriation...."

Nevertheless, the Attorney General's Office rejected the request for reconsideration, expressing the view that it should have been submitted by the minister of agriculture and livestock, Dr Hernan Fonseca, and not by the attorney, because he is superior in the chain of command.

The notion that the boundaries of national parks may only be expanded or reduced through a law of the legislative branch is also upheld by Jorge Enrique Romero Perez.

Romero claims that Article 13 of Law No 6084, of 16 August 1977, so stipulates, remarking: "Hence, the principle of legality often violated by this administration impedes such action on the part of the presidency of the republic."

He gave a reminder that it is regarded as a proven, actual fact that expropriation or the reversal of expropriation can be made only by law, and that "there are many who have undergone expropriation without having been paid, in addition to those affected by the government in the case of Palo Verde."

He added that the sums of money to be paid are ridiculous, in comparison with the large volume of the expropriations.

"That situation is so obvious that even an adviser from the Presidential Household of the Republic, engineer Mario Boza, stated in the press his opposition to the arbitrary conduct of the executive brnach. What interests are afoot behind this new illegality of the present government?" the attorney wondered.

Minister

The minister of justice, Elizabeth Odio, for her part, commented that it is the unanimous view of the prosecutors of the republic that, on the basis of Article 45 of the Political Constitution and the local laws, a national park must be entered in the Public Registry in order to become part of the state's forest holdings.

However, she explained that, in order to make this registration possible, the property must be acquired through direct purchase or expropriation.

She said that, in the case to which the order relates, what existed was a confiscation, because no expropriation took place, nor was payment made to the owners of the land. She claimed: "The confiscation of a property is not allowed here."

She also emphasized the fact that there is no money with which to pay the owners for the property, and that it was for this reason that the decision was made to withdraw land from the park.

2909
CSO: 5000/2154

COUNTRY'S REFORESTATION CAMPAIGN SUCCESSFUL

Guatemala DIARIO DE CENTROAMERICA in Spanish 9 Jul 81 p 3

[Text] During the three years of General Lucas' government, the reforestation of the country has attained goals never before achieved by other governments, as evidenced by the results obtained under the National Reforestation Plan.

In order to satisfy the demand for plants all over the country, the National Forestry Institute has, over the last 3 years, produced and sown 91,892,163 seedlings of varied species, with an investment of thousands of quetzales.

The National Forestry Institute (INAFOR) currently depends on 173 nurseries, located in strategic areas of the country, to facilitate the reforestation.

The nurseries provide the species required by the ecology of each region, and preference is given to those areas which are marked for reforestation.

The reforestation effort is being carried out in a programmed fasion, and according to the needs of the country, principally in the river basins which feed the Republic's communities.

These projects are located in the river basins of the Xaya-Pixcaya River in Chimaltenango, with 392 reforested hectares; the Aguacapa River in Santa Rosa, with 699 hectares; the Grande River, Zacapa-Chiquimula, with 629 hectares; Cuilco River, Huehuetenango, with 295 reforested hectares; Pensativo II River, Antigua Guatemala, with 547; Suchiate River, San Marcos, with 920 reforested hectares; Teocinte River, San Jose Pinula, with 879 hectares; Chixoy River in Alta Verapaz, with 73 hectares; and the metropolitan area, with 505 reforested hectares.

The national reforestation campaign, vigorously fostered by General Lucas' government, has received the unrestricted support of district governing bodies, municipalities, teachers and students at all levels, but especially from the public and private sectors, which are realizing the need to implement projects in order to meet the great demands for energy, and to avoid environmental contamination.

In a futuristic move, the necessary guidelines have been created for the establishment of new nurseries for the production of plants over an area of 2,500 hectares, under the Lago de Amatitlan Conservation Project; communal forests for kindling; the reforestation of 270 hectares per year; and for the control and creation of national parks.

During this administration a national campaign against the pine mite was initiated, since it constituted a plague that was decimating the conifer forests, particularly in the western highland departments of the country. Work has been done to clear 10,000 hectares, an area of land which has been the object of restoration through reforestation.

With the goal of assuring that the natural resources will be used for the benefit of the country's inhabitants, INAFOR acted as consultant to such forestry cooperatives as San Juan Ixcoy in Huehuetenango; San Juan de Argueta, Solola; Llano de las Flores R.L. in Malacatancito, Huehuetenango; Chiclera del Estor R.L. in Izabal; and El Bosque in San Jeronimo, Baja Verapaz.

9730
CSO: 5000/2153

NPN ACCUSED OF CREATING BROWN, NOT GREEN REVOLUTION

Enugu DAILY STAR in English 11 Jul 81 p 2

[Article by Sam Chike in the column "Political Diary": "From Green to Brown Revolution"]

[Text] LARGE acres of cassava farms and other crops were reported to have been destroyed at Okara inland in Ethiope local government area of Bendel State.

About forty-five farmers who were believed to be anti NPN were said to be affected by the damage. Their farms were said to have been destroyed as a result of a massive bulldozing of lands by some leaders of NPN under the cover of the green revolution project.

Using the words of the Supervisory Councillor for Agriculture in the area, Chief M. D. Asini, the action of the leaders is a deliberate damage to our crops and an open display of political victimization.

The Green Revolution Programme is aimed at increasing food production and not the destruction of crops.

According to Chief Asini, if the Green Revolution Programme were to be genuine, they should have directed their attention to forests and virgin lands for cassava farms.

Yeah, Sam Chike agrees with what Chief Asini said. What the NPN is doing is no more green revolution but brown revolution. It is using (NPN) starvation as a weapon. The new move is to starve opponents somehow into submission. All other moves to convert or buy the victims over into NPN has proved abortive so it wants to destroy their means of livelyhood.

The members of NPN in Bendel State don't want the green plants to appear any more in the lands of their political opponents. They want their lands to be arid soil with little or no productivity.

The top soil is fertile. This is where we plant our crops to promote green revolution. But when we dig deeper, we get unfertile or eroded soil without sufficient nutrient for crops. This is what these NPN members are doing to punish their opponents but cover it up as promoting the green revolution.

The NPN has once more proven itself immature and incapable of handling the affairs of the nation.

One thing is to win at the election and another thing is to rule. Our people have been deceived by the 1979 election promises. The NPN has promised heaven and earth to the people and they thought they were sincere. That was why they were voted into power. Now the people have realized that it was an empty boast.

The NPN needs some re-education. It seems not to know what it is doing. It is full of contradictions. A kingdom at war with itself will not stand.

Destroying the crops meant for promoting green revolution is going counter clock wise and destroying the development project of the Federal Government. We are one nation. We should be so treated. Differences in party affiliations do not mean that we are different nations.

CSO: 5000/5043

USSR ENVIRONMENTAL LEGISLATION DESCRIBED

Moscow SOVETSKAYA ROSSIYA in Russian 5 Jun 1981 p 1

[Interview with O. S. Kolbasov, head of environmental protection sector of the Institute of Government and Law of the USSR Academy of Sciences, doctor of juridical sciences by V. Zhilyayeva and T. Il'ina, date and place not given: "Land of People"]

> [Text] The "Main Directions for Economic and Social Development of the USSR for 1981-1985 and the Period to 1990" adopted by the 26th CPSU Congress focused a lot of attention on environmental protection. Closed systems of water use will be developed and introduced, protection of water sources from depletion will be strengthened and work will be continued for protection and efficient use of unique natural complexes.

Billions of people live on our planet. But throughout time nature has been and remains the only one for all of us. The welfare and very existence of mankind on earth depends on its condition. Specialists of all branches are now studying its protection. At the request of our correspondents, O. S. Kolbasov, head of the environmental protection sector of the Institute of Government and Law of the USSR Academy of Sciences, doctor of juridical sciences relates how law helps protection of nature.

[Answer] There are many laws on environmental protection in world law. The majority of them have been adopted in recent decades. The effect of human activity on nature has grown so much now that it needs precise legal regulation. Judge for yourselves. According to the data of the International Union of Protection of Nature and Natural Resources, as a result of soil erosion, use of lands in industry, power engineering, city construction, transportation and so forth, the dry land is being degraded at a rate of 44 hectares per minute. In this time 20 hectares of forests disappear. According to an estimate of the U.N. environmental program, the world uses 4 million artificial chemicals and every year 7000 new ones appear. Their application may have harmful biological consequences. The convention on international trade of species of wild fauna and flora that is threatened with extinction has information that trade of these species has reached giant scales.

The need for environmental protection has become urgent. The Soviet Union is therefore persistently strengthening and expanding international cooperation so that the joint efforts of the nations will save the earth.

[Question] What environmental protection standards are stipulated by international law?

[Answer] A considerable number of these standards refer to spaces which are beyond the limits of the state territory, the World Ocean, atmospheric air and space. In particular, a number of conventions have been adopted to protect the sea from pollution with oil, solid wastes from ships,from oil fields and other developments of the sea bottom, and from dry land. Individual conventions have been adopted to protect individual regions, for example, the Baltic Sea. The agreement on the Antarctic is significant. It proclaims it as a unique scientific test site that is not subject to use for military purposes.

The international air law was previously linked to the use of this space for aviation communication. Now it also covers questions of protecting the atmospheric air from pollution. On the initiative of the Soviet Union, a convention was concluded in 1979 for transboundary air pollution great distances. It covers the countries of Europe, the United States and Canada. In December of last year, the U.N. General Assembly approved a draft resolution presented by the USSR "On the Historical Responsibility of States for Preservation of the Nature of the Earth for Today's and Future Generations." The USSR is the supporter of over 70 agreements and is the participant in over 60 international organizations involved in environmental protection.

[Question] How does the USSR cooperate with foreign countries in environmental protection?

[Answer] An eloquent example is the joint work of the scientific research and planning-design organizations of the member countries of the CEMA on the problem "Protection of the Atmosphere from Pollution with Harmful Substances." Here is a small list of its results. At the end of the last five-year plan, promising methods of purifying gas wastes of sulfurous anhydride were brought to industrial development. Technical documents were prepared for series production of highly efficient electric filters. Fabric dust-traps made of new materials have been successfully tested.

Interaction with some of the capitalist countries has recently become noticeably more complicated. On the initiative of the American side, scientific and technical Soviet-American cooperation in many directions was "frozen." However, this did not affect environmental protection. Last year the regular meeting of the USSR and U.S. specialists took place on legal and administrative measures of environmental protection.

Various laws are also adopted here and national governmental organizations have been set up for environmental protection. But the industrialists often ignore them. The U.S. oil monopolies, for example, required that the federal standards for the sulfur content in petroleum products be "softened" or postponed. The coal industrialists set as a condition for increased fuel extraction the abolition of standards for emission of sulfurous compounds into the atmosphere. The expensiveness of environmental protection measures justifies the rise in prices for goods.

[Question] What is the peculiarity of the legal environmental protection in the USSR?

[Answer] Our economic activity previously took into consideration measures for the protection and efficient use of natural resources, but starting in the 1970's, their mandatory planning was introduced. Practically every sector of nature use now has legislation of the USSR and the union republics, and the emphasis is on preventive requirements. Last year the Soviet Union adopted two such important laws. For the first time, an attempt was made for complex legal regulation in the USSR law for protection and use of the animal world.

Many countries have laws on protection of the atmosphere, but mainly from pollution by industrial and domestic emissions of dust, gases and vapors. Only the USSR law on protection of the atmospheric air stipulates any harmful effects on it, physical, chemical, biological, control of noise, harmful radiations, and effects on the weather and climate. Our country was the first in the world to establish maximum permissible concentrations for over 140 harmful substances in the atmosphere, and over 480 in reservoirs, and dozens of their combinations. These are the most stringent standards.

State ecological consultation of construction and economic projects and planning solutions are made extensively.

Strict measures have been legalized for responsibility for violation of the standards and regulations for the use of natural resources. Unfortunately, they have to be used often. The reasons for the violations are the lack of ecological knowledge, inability to use it in practice and insufficient monitoring. An orderly system of laws which permit protection of nature from any harmful factors has now been formed in Soviet law. But the river, forest and field cannot turn to us themselves for protection. "We have adopted many good laws, comrades," stated L. I. Brezhnev at the 26th Party Congress. "Now it is a matter of the accurate and steady implementation. Any law only lives when it is fulfilled, fulfilled by all and everywhere."

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CSO: 5000/32

ESTONIAN ENVIRONMENTAL, WILDLIFE PROTECTION LEGISLATION

Tallinn SOVETSKAYA ESTONIYA in Russian 12 Jun 81 p 3

/Speech of Ye. F. Filatov, chairman of the Commission for Nature Conservation and the Efficient Use of Natural Resources of the Estonian SSR Supreme Soviet, at the Third Session, 10th Convocation, of the Estonian SSR Supreme Soviet; abridged: "On the Drafts of the Estonian SSR Law 'On the Protection of the Air' and the Estonian SSR Law 'On the Protection and Use of the Animal World'"/

/Text/ Dear comrade deputies! Among the most important problems facing mankind, the solution of which today has been placed on the practical level, is the problem of protecting the natural environment.

Under the conditions of scientific and technical progress and the rapid development of industry, transportation and agriculture, when powerful means of influencing nature have already been and continue to be created, the economical, scientifically sound use of its resources is becoming an urgent necessity.

"When taking steps to expedite scientific and technical progress," Comrade Leonid Il'ich Brezhnev said, "it is necessary to do everything so that it would be combined with a practical attitude toward natural resources and would not serve as a source of the hazardous pollution of the air and water and the exhaustion of land. The party is increasing the demandingness on planning and economic organs and design organizations, on all our personnel for the matter of the designing and construction of new and the improvement of the operation of operating enterprises from the point of view of conservation. Not only we, but also subsequent generations should have the opportunity to enjoy all the benefits which the beautiful nature of our homeland provides."

The questions of the protection of nature and the efficient use of its resources are nowhere being raised as extensively as in the Soviet Union. They have been at the center of attention of the Soviet state since the first days of its existence.

Lenin's ideas of the protection of nature and the most efficient, practical utilization of its resources find concrete embodiment in the policy of the Communist Party and in the activity of the Soviet state.

The new USSR Constitution, as well as the Estonian SSR Constitution, which proclaimed that in the interests of the present and future generations the necessary steps are being taken in our country for the protection and scientifically sound, efficient use of the land, its mineral resources, the plant and animal world and for keeping the air clean, expressed most thoroughly the principles of the socialist attitude toward nature.

The achievements of the Soviet state in the area of economics are creating a firm basis for the implementation of large-scale measures which are aimed at the protection of the natural environment. During the 10th Five-Year Plan alone more than 50 million rubles of state capital investments were allocated for these purposes in the republic. Production associations, enterprises, kolkhozes and sovkhozes are allocating considerable capital for conservation needs.

The scientific system of the efficient use of nature is constantly being improved. It is being widely adopted in conformity with the state plans of economic and social development in all the sectors of the national economy.

Soviet legislation is playing an important role in the matter of the protection of nature and the efficient use of its resources. The land, water and forest codes and the code on mineral resources, which were adopted by the Estonian SSR Supreme Soviet, as well as the decisions of the party and the government on questions of the intensification of the protection of the natural environment have created the necessary conditions for a more correct, practical attitude toward natural resources.

The drafts of the Estonian SSR laws "On the Protection of the Air" and "On the Protection and Use of the Animal World," on which the Legislative Proposals Commission, the Industry Commission, the Agriculture Commission and the Commission for Nature Conservation and the Efficient Use of Natural Resources of the Estonian SSR Supreme Soviet, which examined the mentioned drafts in advance, commissioned me to report to you, have been submitted for discussion to the current session by the Estonian SSR Council of Ministers.

In conformity with the decisions of the Central Committee of the Communist Party of Estonia and the Estonian SSR Council of Ministers much was done in the republic during the years of the 10th Five-Year Plan to improve the air basin. Planned measures on the improvement of technological processes, the improvement of the operation of existing and the construction of new gas, ash and dust traps and the further changeover of apartment and public buildings and enterprises to central heating were implemented.

As a result of the taken steps the level of air pollution in the republic stablized and in places decreased. It is a pleasure to report that in the city of Kokhtla-Yarve, which is located in the most polluted air basin in the republic, at present the air has become much cleaner than it was at the beginning of the 10th Five-Year Plan.

Measures aimed at stepping up the protection and improving the use of the animal world are also being consistently implemented.

The ministries and departments, scientific institutions and scientists of the republic took an active part in the preparation of the bills on the protection of the air and on the protection and use of the animal world. They were drafted on the basis of the provisions of the USSR Constitution and the Estonian SSR Constitution, the decisions of the party and the government on the indicated questions.

These documents will be an integral part of the unified system of conservation legislation. The importance of these bills is obvious. The air and the animal world are among the main components of the natural environment.

The bills being discussed today are called upon to improve the legal regulation of the relations connected with the protection of the air, the protection and use of the animal world, to bring the legislation in effect in this area into the system and to fill the gaps in it.

These documents contain the fundamental, most basic decisions on the corresponding questions. The republic legislation on the protection of the air and the protection and use of the animal world will be developed and improved in the future on the basis of the new laws.

The bills in question are based on the uniform principles of the socialist use of nature.

The drafts proceed from the fact that the measures in the area of the protection of the air, the protection and use of the animal world have been placed in our country on a planned basis.

The drafts assign an important place to questions of the state monitoring of the protection of the air, the protection and use of the animal world. The goals and tasks of state and departmental monitoring, the duties and rights of the organs carrying out the monitoring are specified. Extensive economic organizational and supervisory powers are granted to the local soviets of people's deputies.

The bills reflect the policy being consistently pursued by our party of the utmost enhancement of the role of public organizations and citizens in solving state problems. The principle that trade unions, organizations of young people, societies for the protection of nature and other public organizations, as well as citizens are called upon to assist state organs in implementing measures on the protection of the air basin and on the protection and use of the animal world, is set down in them.

The establishment of liability for violations of the legislation on the protection of the air and on the protection and use of the animal world is called for in the drafts.

The draft of the Estonian SSR Law "On the Protection of the Air" contains a number of fundamentally new regulations which are aimed at stepping up the protection of the air against pollution and other harmful influences. Requirements on the establishment for each source of standards of the maximum permissible discharges of pollutants into the air and the harmful physical effects on it are envisaged in the law.

The introduction of these standards will make it possible to perform more purposeful work on the reduction of harmful emissions into the air, will increase the responsibility of the executives of enterprises and organizations for keeping the air clean, as well as will ensure the more effective monitoring on the part of the appropriate state organs of the implementation of measures on the protection of the air against pollution.

An important place in the draft is assigned to preventive measures in the area of the protection of the air. It is intended that when siting, designing, constructing and putting into operation enterprises and other facilities the strict observance of the standards of harmful effects on the air will be ensured. At the same time the trapping, recovery and neutralization of harmful substances and waste products, as well as the meeting of other requirements on the protection of the air should be envisaged.

It is stipulated that in cases of the impossibility of reducing the emissions of pollutants and the harmful physical effects on the air to specific standards the corresponding enterprises, structures and other facilities are closed or their production specialization is to be changed.

Much attention in the draft is devoted to the prevention of harmful physical effects on the air. The duty to elaborate and implement measures on the prevention, reduction and elimination of the harmful effect on the air of audible vibrations, including noise, radiations and the like, is placed upon the local soviets of people's deputies, enterprises, institutions and organizations.

The bill also contains a number of other provisions which are aimed at increasing the protection of the air.

The draft of the Estonian SSR Law "On the Protection and Use of the Animal World" solves a set of problems connected with the concern about the protection and proper use of the wild animals which live in a state of natural freedom.

In the draft it is specified that the questions of the use and protection of agricultural and other domesticated animals, as well as wild animals kept in captivity or under semifree conditions, are settled by other legislation.

The animal world in the Estonian SSR, as is emphasized in the bill, is state property--the common property of all the Soviet people. The main demands on the protection and use of the animal world are specified in conformity with this. It is stipulated, for example, that when planning and implementing measures, which might influence the state of the animal world, the preservation of the species diversity of the animals and the protection of the habitat and integrity of their natural communities should be ensured.

In the bill a classification of the types of use of the animal world is given, among which there are mentioned: hunting, fishing, the use of the animal world for scientific, cultural educational, instructional and esthetic purposes and others.

Here it is indicated that the state, cooperative and other public enterprises, institutions and organizations, to which hunting grounds and fishing tracts of hatchery water courses are offered for use, are obliged to implement comprehensive measures on the protection and reproduction of wild animals.

Special measures on the protection of rare types of animals and types threatened with extinction are called for. A number of regulations on the protection of animals when using means of protecting plants, stimulants of their growth, mineral fertilizers and other compounds are being introduced. The arbitrary resettlement and acclimatization of animals are prohibited.

The procedure of the state registration of animals and their use, as well as the rules of the making of a state survey of the animal world are specified in the draft.

It can be confidently stated that important and necessary documents, which along with the previously passed laws will ensure the protection of nature and the optimum use of its resources, have been prepared. However, the large amount of purposeful work, which is connected with the practical solution of the problems of protecting the air, protecting and regulating the use of the animal world, does not end with the passage of these laws; rather, only a new stage of the work begins.

It is recommended to put the laws "On the Protection of the Air" and "On the Protection and Use of the Animal World" into force on 1 October 1981, so that the ministries and departments, on which the duty of settling the indicated questions has been placed, could successfully prepare the appropriate legislative acts.

Comrade deputies!

Let me express confidence that the new laws will be approved by the population of the republic.

They will unquestionably promote the improvement of the operation of enterprises, institutions and organizations and will increase their responsibility for the solution of the problems of the protection of the air and the judicious use of the resources of the animal world.

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USSR

ISSYK-KUL' LAKE POLLUTION CONTROL PROBLEMS

Frunze SOVETSKAYA KIRGIZIYA in Russian 9 Jun 81 p 4

/Interview with Rimma Konstantinovna Belousova, chief of the Administration for the Regulation of the Use and the Conservation of Water of the Kirghiz SSR Ministry of Land Reclamation and Water Resources, by SOVETSKAYA KIRGIZIYA correspondent L. Zholmukhamedova; date and place not specified: "Around the Lake"/

> /Text/ Architects, physicians, engineers and sociologists are working on the problem of the rational zoning and improvement of sanitation of the Issyk-Kul' shore. Much has been done. But the discharges of harmful substances into the natural environment, which are connected with the industrial and agrarian activity of man, are still large.
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> Our correspondent met with R. K. Belousova, chief of the Administration for the Regulation of the Use and the Conservation of Water of the Kirghiz SSR Ministry of Land Reclamation and Water Resources.

/Question/ Rimma Konstantinovna, what problems, in our opinion, require the most immediate solution?

/Answer/ The problem of transporting petroleum products worries me first of all. Yes, we have renounced oil tankers which scurry over the water area of the lake. But in exchange we have gotten an enormous number of gasoline tankers, which uninterruptedly run over the route from Rybach'ye to Przheval'sk and back. There is no place in either city to wash the gasoline tankers. And the drivers customarily "brake" at the numerous streams which, as is known, run into the lake. That is why laboratory studies show only a negligible decrease of the pollution of the lake with petroleum products.

/Question/ But, when replacing the fleet by motor transport, was it not necessary to foresee this?

/Answer/ Of course. We started working immediately. We built a mechanized washer with recirculating water supply at the Rybach'ye Passenger Motor Transport Depot. We built a service station in Przheval'sk. It would seem that all the problems were solved. But here it is necessary to recall the notorious "however." So then, however in Przheval'sk the station is idle owing to serious construction defects, while in Rybach'ye during the first winter the pipes burst from the cold: they "had the sense" to build the washer in an outdoor design. How much effort and capital were expended and all in vain. Incidentally, I recall how ideal the idea of such a washer is: whereas 700 to 1,000 liters of water are required for washing each vehicle, in the washer it is possible to wash all the vehicles with the same water, with the same liters. The washer "sorts out" very well the dirt, oils and water. Incidentally, the same oils, perhaps, after slight reprocessing can be used for boiler houses.

/Question/ Incidentally, who is carrying out the construction of the conservation facilities?

/Answer/ Mainly the Ministry of Construction and the Ministry of Rural Construction, other ministries and departments are also being involved. But I cannot recall another such case, when if just one tank could be immediately received. Many leak, it is necessary without fail to finish many. In the Issyk-Kul' area it has long been time to set up a specialized organization for the construction of treatment plants. Let us assume that if just one construction and installation administration of the Issyk-Kul'stroy Trust were specialized. It would also perform the start-up and adjustment work when erecting compact treatment plants, all the assets would be concentrated here, and it would be possible to use them with greater effectiveness.

/Question/ But, as I understand, do not many defects begin with the designers?

/Answer/ Many do. Many planning and design technological bureaus do not keep in mind that the submission of the designs of conservation projects to water inspection organs for approval is extremely necessary. That is how they built the outdoor washer in Rybach'ye. That is how they built the treatment facilities at the Anan'yev Cheese Plant. They were built according to the design of the planning and design technological bureau of the Ministry of the Meat and Dairy Industry. They began building them back in 1975, but when they will begin to operate, I cannot say even roughly. The sewage of the plant is saturated with protein, and during its purification enrichment with oxygen is mandatory. Only them do the chemical reactions and the breakdown into clean water and sediment begin. The designers proposed to construct an aeration tank--a concrete canal up to 2 m deep--with a mechanical rotor, which, in their opinion, should have supplied oxygen here. And the rotor "supplies" by scooping only 15-20 cm of the flow. Such a set-up is fine for household sewage and for small aeration tanks. Here it is clearly out of place. Blowers are needed to correct the situation, but this again means money, which there is no place to get. The designers make a heap of errors when laying out the water supply and sewage systems.

Standard treatment plants designed for northern regions were built at the Przheval'sk Slaughtering and Sausage Center according to the plan of the same planning and design technological bureau. Whereas in Rybach'ye the washer is idle because it is outdoors, here, on the contrary, the aeration tanks are sealed tight. And the effluents entering them, honestly, are cleaner than the outgoing "treated" effluents. The enterprises of the Ministry of the Meat and Dairy Industry are a real scourge for the natural environment of the Issyk-Kul' area.

The treatment plants for the city of Przheval'sk were under construction for 11 years. They have been completed. In January of this year the commission accepted them. I believe I would not surprise you if I said that they are also idle today. And again there are errors in the design, construction flaws. The city soviet executive committee is not concerned enough with the development of the sewer system.

/Question/ Rimma Konstantinovna, situations, when the orders of the water inspection organs are brushed aside, today are probably already rare. But what, besides fines, can the water inspection organs use against those guilty of polluting the natural environment?

/Answer/ Yes, fines, unfortunately, are not always effective. But we do have another means. We send to the funding organizations information about the fact that the administration of a certain enterprise is not fulfilling the orders of the inspection organs and it is inadvisable to pay them bonuses (and these amounts are often considerable). So in recent years they have been trying not to come into direct conflict with us. The time has passed when it was simply possible to turn one's back on treatment plants, by using more important matters as a cover.

/Question/ But there is also another, not necessarily conflictive, means of evading orders. For example, while agreeing with the objective necessity, is it not possible "to bide one's time"?

/Answer/ Back in 1977 the republic government adopted a decree on moving the sheep pens from the shore of the lake. It was a question of 65 sheep pens. And, since this matter was difficult, they "spread" the move over years. They gave time for steps to be taken. For example, in 1977 3 sheep pens were to be moved, in 1979—22. In reality in 1977 not one was moved, in 1979 only 10 were. In all 26 sheep pens have been moved. It was proposed to construct dams and treatment plants at some farms. So far this has been done only in Tyupskiy and Dzhety-Oguzskiy Rayons, and then at far from all the farms.

/Question/ This year many organizations and enterprises were faced with the fact that their holiday hotels "suddenly" closed. Is it likely that this should nevertheless have been expected?

/Answer/ Of course, this did not at all occur suddenly. The Rybach'ye Ship Repair and Shipbuilding Plant is preparing compact treatment plants, which have proven themselves to be excellent and are especially necessary for holiday hotels. But the ministries and departments are in no hurry to redeem and install them, hoping for the customary "off-chance." The off-chance will come to pass. At present 18 compact plants are in operation on the shore, but more than 60 are necessary. Moreover, a single plant can serve two or three holiday hotels. The water treated by the compact plants can be used for watering the gardens and flower beds of the holiday hotel. Hygrophilous nut groves can be planted around the compact plant. But for the present, unfortunately, at many holiday hotels they are getting by with the "ancient" method: they build concrete cesspools, the contents of which are hauled away to certain sites. And although such effluents do not enter the lake directly, they enter it indirectly, through underground springs. In short, such holiday hotels are potential polluters.

A schedule of when what holiday hotel is to acquire a compact plant has been drawn up. Those that have violated it are now forced to say that here, they say, the holiday hotel was "suddenly" closed.

And, incidentally, I cannot but speak about private motor transport, which people continue to wash in the rivers. They know this must not be done, but they wash them, fleeing at the critical moment from the inspectors of the Issyk-Kul' Basin State Water Inspectorate.

Very many questions still have to be solved in protecting the rare natural environment of the Issyk-Kul' area. But these questions are not among the insoluble ones. It is necessary just to roll up one's sleeves and start working with all the responsibility.

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CSO: 5000/30

EARTHQUAKE PROTECTION IN GEORGIAN COAL MINES

Tbilisi ZARYA VOSTOKA in Russian 7 Jun 81 p 2

/Article by Georgian State Prize Winner and Candidate of Technical Sciences Yu. Tsintsadze, director of the All-Union Scientific Research Institute of Labor Protection of the AUCCTU: "The Force of Shallow-Focus Earthquakes"/

/Text/ An enormous portion of the capital investments are being invested in the mining sector. And this is natural: the demand for natural raw materials is increasing with each year.

"The extractive sectors as a whole, apparently, must also be approached in a new way," General Secretary of the CPSU Central Committee Comrade L. I. Brezhnev emphasized while speaking at the 26th CPSU Congress. "...the means for this is the acceleration of scientific and technical progress, the complete, thorough processing of minerals, the more extensive use of secondary resources."

Serious problems on this level face the republic coal industry. At the 26th Congress of the Communist Party of Georgia it was noted that a very undesirable tendency for coal production to decrease, especially at the Tkibuli-Shaorskiy deposit, which is the main fuel base of the Georgian SSR, has been noticed here in recent times. The working of this deposit involves the solution of a number of scientific and technical problems, among which the questions of controlling such complex dynamic phenomena as mine shocks, outbursts of coal and gas and so on are, occupy an important place. Such phenomena are always a danger for miners, and especially under the conditions of the Tkibuli-Shaorskiy deposit, since here nature literally tried to unite all the undesirable geological mining parameters--a great depth of the working of the coal seams, thick and surrounding rock, a considerable degree of techtonic disturbance, the mountainous topography and seismicity of the region.

The working of the Tkibuli-Shaorskiy deposit has also been complicated from the standpoint of the safe performance of mining. Precisely for this reason the new work "Razrabotka i vnedreniye spetsial'nogo kompleksa mer po bezopasnosti i effektivnoy obrabotke moshchnykh udaroopasnykh plastov uglya Tkibuli-Shaorskogo mestorozhdeniya v seysmicheski aktivnom rayone" /The Development and Introduction of a Special Set of Measures on Safety and the Efficient Working of Thick Shock-Prone Coal Seams of the Tkibuli-Shaorskiy Deposit in a Seismically Active Region/, which was compiled by the group of scientists consisting of G. Gelashvili, E. Gordeziani, N. Kvinikidze, K. Kuchukhidze, I. Petukhov and A. Filinkov, is of particular interest.

When studying the mechanism of the manifestation of mine shocks the specialists established that one of the main causes of their occurrence is local shallow-focus earthquakes with an intensity of 3 to 5, which occur in the immediate vicinity of the mine areas at depths up to 5 km as a result of minor techtonic movements of the rock in area and depth. The latter is responsible for the formation in the massif untouched by mine working of so-called rock belts. Under certain conditions these phenomena are manifested as mine shocks with a higher concentration of strains.

On the basis of theoretical and experimental research and modern engineering methods of studying the physical parameters of rocks under the natural conditions of their occurrence, the development of remote control seismic systems of observations and special mine equipment the scientists developed reliable methods of the estimation of the degree of shock-proneness of sections of coal seams. A set of special measures on the prevention of mine shocks, including the advanced working of protective seams, the local and regional injection of water into the coal seams, the use of yielding metal props made from a special section, a new advanced technology of preparing and working the mine and stoping area and so on, has been elaborated.

The extensive introduction of the indicated measures made it possible to decrease considerably the frequency and intensity of occurrence of dynamic phenomena and to eliminate at the mines of the Tkibuli-Shaorskiy deposit emergencies and the production accidents caused by mine shocks. One of the urgent and difficult mine engineering problems was thereby solved.

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CSO: 5000/30

PREVENTION OF SHALLOWING OF LAKE BALKHASH

Moscow TRUD in Russian 26 Apr 81 p 1

/Article by K. Borisov (Alma-Ata): "Water for Lake Balkhash"/

> /Text/ Scientists of the Institute of Hydrogeology and Hydrophysics of the Kazakh SSR Academy of Sciences have drawn up a plan to protect Lake Balkhash from shallowing.

Unique Lake Balkhash is becoming shallow. In the past decade alone its level has dropped by 1.5 m, the salinity has increased appreciably, the catch of valuable species of fish has declined and the number of water fowl has decreased. And the muskrat colonies have especially suffered. The Bakanasskiy Fur Management, for example, last year procured only 40,000 valuable pelts, two-thirteenths as many as in 1970.

In recent years a large zone of irrigated farming has been established in the southern Balkhash area. The fields and orchards tap nearly all the summer runoff of the rivers which feed the lake, only the high-water Ili River carries its waters to the lake. The fertile valleys, which have quenched the secular thirst, are providing exceptional harvests of rice, fruits and grapes. But the land reclaimers are developing newer and newer lands. And at the same time the area of Balkhash is decreasing rapidly. Scientists warn: desert will begin to encroach on the adjacent lands, the climate will change, while the drying basin of the lake might be transformed into the place of origin of dust storms. Finally, the enterprises of ferrous metallurgy will lose a reliable source of water supply.

Leading scientists of Moscow, Leningrad and Alma-Ata are busy seeking ways to save Balkhash. On an enormous area around Balkhash scientists of the Institute of Hydrogeology and Hydrophysics of the Kazakh SSR Academy of Sciences have discovered enormous artesian basins of fresh water. The largest of them is only 20 km from the lake, at a shallow depth. Its reserves exceed by 10-fold the amount of water in Balkhash itself. The scientists have proposed to use the underground basins for irrigating the fields and orchards, without tapping for this the water from the rivers which feed Balkhash.

As it turned out, the reserves of the underground seas are continuously replenished, and with their rational use it is possible to maintain a constant water balance. The hydrogeologists and hydrophysicists have elaborated the operating conditions of the found receptacles of water. They have answered the question: Where does so much water under the deserts, which suffer from the heat, come from? It turns out that the reservoirs hidden in the depths of the earth are fed by melting glaciers. Nearly half of the water of the mountain rivers soaks into the ground at the foot of the ranges, and then slowly travels under the ground.

Now more than 40 large industrial centers of Kazakhstan are supplied with artesian water. Alma-Ata receives nearly 80 percent of the water it needs from under the ground. Artesian wells are being used for irrigating pastures. Now the question of the more extensive use of ground waters for the needs of irrigated farming is on the agenda. The increase of the lands irrigated with ground waters by the end of the five-year plan will come to about 100,000 hectares. Tracts located near the rivers flowing into Balkhash will account for a considerable portion of them. And, hence, the condition of the lake will also improve.

7807
CSO: 5000/30

INLAND WATER POLLUTION CONTROL MEASURES

Moscow PRAVDA in Russian 22 Jun 81 p 3

/Article by V. Lozanskiy, director of the All-Union Scientific Research Institute of Water Conservation (Khar'kov): "Our Vital Water"/

> /Text/ Unlike such natural resources as petroleum, gas or coal, the reserves of water with time virtually do not change. But its quality changes. The increase of the amount of pollutants in the water of rivers, lakes and reservoirs, which is being observed in many countries, is arousing serious anxiety.

The pollution of rivers and watercourses is connected not only with the influx into them of city and production sewage, as is believed at times. Rain, snow melt and street sprinkling water, which wash from the territory of population centers, industrial sites and farming lands various suspended substances, petroleum and petroleum products, as well as pesticides and chemical fertilizers, also make a significant "contribution." There are also other sources of pollution. A comprehensive, systems approach is needed in controlling them. It is necessary to know not only from where and what amounts of harmful substances enter a river or watercourse, but also how the transformations of these substances occur in them. And not only the technical and economic, but also the administrative and legal means of controlling the quality of natural waters must be mobilized.

The amounts of the maximum permissible discharges of substances, which run off with waste waters, should become the most important administrative regulator of the inflow of various contaminants into natural waters. The method of their calculation has been elaborated by the All-Union Scientific Research Institute of Water Conservation (VNIIVO). But this is only the first step toward the achievement of the utlimate goal. Planning and operational management follow it.

On the orders of the USSR State Committee for Science and Technology the VNIIVO with the participation of the staff members of a number of institutes is completing the drafting of comprehensive goal programs of water conservation of the country, including for the basins of the Dnepr and Severskiy Donets. Their implementation will make it possible in the immediate future to ensure and maintain a favorable water quality in the rivers with the minimum possible expenditures of resources. The centrally controlled water conservation complexes of the river basins will be the technical basis of this. Automatic control systems of water conservation complexes (ASU VK) are being developed for their efficient operation. The Main

Directions of the development of the country, which were adopted by the 26th CPSU Congress, provide for their creation in the basins of the most important rivers of the European part of the USSR.

The automated control systems of water conservation complexes include the equipment and structures, by means of which the continuous objective monitoring of the consumption and composition of the drainage of water, the treatment of sewage and the control of the river discharge will be accomplished. The cycle of work here looks as follows. The information on a change of water quality from automatic monitoring stations or from conventional hydrochemical laboratories is fed into a computer, which processes it and issues control commands for the change of the operating conditions of the water conservation structures. By means of remote control systems these commands are relayed to the regulators, which decrease the discharge of pollutants, increase the degree of their dilution and so on.

The construction of the pioneer experimental production automated control system of water conservation complexes with the central control room in the city of Severodonetsk is being completed on the Severskiy Donets River. The tests of the first start-up complex showed that by means of this system it is possible in practice to ensure the observance in the process of operating water conservation structures of the amount of the permissible harmless discharge of sewage. This was confirmed in 1979, when the best water quality in the past 15 years was achieved by means of the section of the automated control system of water conservation complexes, which had been put into operation, on the most heavily used section of the river below the cities of Slavyansk and Lisichansk.

Now it is no longer doubted that the continuous objective monitoring by means of modern automated measuring instruments of all the main discharges of sewage will help to ensure the planned reduction of the discharge of harmful substances and to step up the efforts of economic managers on converting to waste-free production processes. It will increase the responsibility for the implementation of water conservation measures in the sectors. By promptly warning about all instances of violations of water legislation, it will clearly and conclusively establish the specific parties guilty of polluting the water.

The centrally controlled water conservation complexes of the river basins are a qualitatively new approach to the solution of the problem. And, of course, here one does not get by without difficulties. The main reason for their occurrence is that the procedure of elaborating, adopting and including in the national economic plan comprehensive goal programs of water conservation for the present has not been specified on a state scale. This matter is being carried out, so to speak, on the basis of initiative. The main organization--the drafter of the program--has neither administrative nor financial levers, by means of which it could coordinate the work of the coperformers.

There are many difficulties with the instrumentation. This is a question first of all of the automated water quality control stations, the samplers and the devices for the biological testing of the toxicity of sewage. The demand for them throughout the country comes to tens of thousands. Apparently, their production should be organized at the enterprises of not only the Ministry of Instrument Making, Automation Equipment and Control Systems, which is first of all responsible for this, but also other ministries. Including, of course, the USSR Ministry of Land Reclamation and Water Resources. The necessary scientific stockpile exists for this. Work on its development could be launched at such institutes as the VNIIVO, the All-Union Scientific Research Institute of Water Supply, Sewage, Hydraulic Structures and Hydrogeology and a number of others, having properly coordinated it.

The ultimate success of the matter of protecting the cleanness of water in many ways, if not decisively, depends on its organization. A true, single master of the river basin as a whole is needed here. Now within it there are tens of thousands of large and small water users, there are inspecting organs, but there is no management organ, which would have the necessary powers and would be responsible for the state of affairs in the river basin. For example, in the Volga basin there are six administrations for the complete utilization and conservation of water, while in the Dnepr basin there are nine, and here they are subordinate to the ministries and departments of three union republics.

The aspiration to improve the coordination of water conservation work has led to the creation on a public basis of committees for problems of the basins of the Desna, Don, Volga, Ural, Ob' and Severnaya Dvina. They are doing much useful work, but, of course, cannot replace the economic organs of the management of the water basins.

In addition to territorial separation there is also another kind of separation. The oblast production administrations of reclamation and water resources for some reason are not in charge of water facilities within the cities. The municipal services deal with them. The same thing is happening at some reservoirs. For example, the Pechenezhskoye reservoir on the Severskiy Donets is under the jurisdiction of the municipal services. Since water in the USSR makes up the unified state water fund, everything speaks in favor of the organization of a service to manage water basins as a unified whole. Subsequently it could become the base for the creation of a Unified Water Management System of the country.

The water management of the country in its essence is an independent sector, which provides users with water of the necessary quality in the necessary amount and is responsible for the most favorable condition of water facilities. In order for it to cope fully with its tesks, an adjusted mechanism of its cost accounting relations with other sectors of the national economy, in my opinion, is required. The introduction of paid water use seems necessary. The practical experience of past years has shown that the "planned" fines for the discharge of untreated or inadequately treated sewage cannot play the role of a regulating mechanism. They should be an exceptional phenomenon, they should be attributed to the nonproductive expenditures of enterprises and not taken into account in the planned production cost. A fee should be exacted both for the diversion of water and for the discharge into water facilities of sewage which has been purified to set norms, while the expenditures on such purification should be assigned to the cost of the product (services).

The implementation in our country of a set of measures on the control of the quality of natural waters will make it possible to utilize more completely the advantages of our socialist method of managing the economy and to improve the state of man's environment.

7807
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'PRAVDA' EDITORIAL STRESSES IMPORTANCE OF NATURE CONSERVATION

Moscow PRAVDA in Russian 3 Jun 81 p 1

/Editorial: "Concern About Nature"/

/Text/ In our country the work on nature conservation has acquired an extensive scale. Many industrial enterprises are actively participating in it. Thus, at the Novopolotsk Petroleum Refinery in Belorussia a closed processing method has been introduced, treatment facilities are operating efficiently and means which make it possible to trap contaminants and to set up their recovery are being used. Much is being done to protect nature at the Verkhnedneprovsk Mining and Metallurgical Combine in Dneprovskaya Oblast, the Chelyabinsk Electrolytic Zinc Plant imeni S. M. Kirov and a number of other large enterprises.

If we speak as a whole about what was done in the area of nature conservation during the past 5-year period, a scale picture will appear. Some 67 km^3 of water were reused, which is equivalent to the "saving" of an entire river. Measures on protecting the air basin were implemented. The recultivation of 100,000 hectares of land disturbed by mining was carried out annually. The area of restored forests increased on the average by 2 million hectares a year.

In the Accountability Report of the CPSU Central Committee to the 26th party congress Comrade L. I. Brezhnev named the inevitable increase of the expenditures on environmental protection among the features of economic development during the 1980's. The consumption of natural resources is the first principle of the activity of man on earth. But the more extensive the scale of the economy is, the more economically natural resources must be consumed.

Specific tasks on improving nature conservation are set in the Main Directions of USSR Economic and Social Development for 1981-1985 and the Period to 1990. The attention toward the preservation of farming lands has to be stepped up, the rate of recultivation of land has to be increased. It is necessary to develop mineral deposits comprehensively and to show greater concern about the cleanness and fullness of rivers and lakes. Technological processes and means of transportation should be improved in order to reduce the discharges of harmful substances into the air. Measures aimed at increasing the number of wild animals and breeding valuable types of fish will be implemented, the guarding of forests against fires and their protection against pests and diseases will be increased. The entire set of these operations concerns not only economic managers, but also local soviets and the public at large.

Measures on environmental protection, of course, require reliable technical support. In particular, the goal of increasing the output of highly efficient equipment for gas purification, dust trapping and the disposal of industrial sewage has been set for chemical and petroleum machine building during the 11th Five-Year Plan; the instrument makers should increase the output of instruments and measuring devices for monitoring the condition of the environment. The complete processing of raw materials and the extensive use of resource-saving equipment and low-waste, waste-free and energy-saving processing methods are becoming a common concern.

In order to cope with these tasks more successfully, it is necessary first of all to eliminate the existing shortcomings. The departmental approach to the matter still has an effect here. Thus, from year to year the assets allocated for conservation measures for the USSR Ministry of Power and Electrification are not being assimilated. The problem of trapping sulfur compounds from the exhaust of thermal electric power stations is being solved slowly, but then this would make it possible not only to make the air basin cleaner, but also to obtain sulfuric acid, which the national economy needs. Enterprises of ferrous metallurgy are polluting the air, they are also slowly carrying out the recultivation of mine workings and industrial dumps. The underestimation, and especially the neglect of conservation operations must not be allowed. It is the duty of ministries and departments to act here as organizers and to monitor the progress of the work.

By the end of the five-year plan it is planned to deliver for agriculture not less than 115 million tons of mineral fertilizers and 650,000-680,000 tons of agents to protect plants a year. They must be used competently and efficiently so as not to harm the environment. It is necessary to use biological means of protecting plants more extensively in the drive against losses of the harvest due to pests and weeds. The managers of enterprises of the agro-industrial complex are called upon to see to the efficient use of water and the improvement of the state of irrigated and drained lands.

Nature conservation measures require thorough scientific substantiation. Here it is up to the scientists, they have to answer a number of important questions raised by practice. For example, the formation of a network of reserve areas and national parks has to be continued. It is the duty of scientists to conduct research on a high level so that it would effectively help the development of land.

A number of state acts, which regulate the use of nature, have been passed in our country. Among them are the fundamentals of all-union forest and water legislation, laws on natural resources, air protection and the protection and use of the animal world. Much work on creating and developing a system of cadastres of natural resources, which should be performed more actively, lies ahead. During the current five-year plan state administration will be improved and monitoring in the area of the use of nature and environmental protection will be stepped up.

Nature and its resources are our common property. The concern that its beauty and generosity also be preserved for future generations should be national. The republic societies for the protection of nature have to their credit many gains both in ecological propaganda and in the mobilization of broad groups of the population for the protection of the resources of their native land. It is necessary to involve the public more extensively in this important matter.

The republic, kray and oblast party organizations and the party committees of departments and enterprises are obliged to devote unremitting attention to questions of nature conservation and the efficient use of its resources and to ensure regular monitoring of the proper use of natural resources and the effectiveness of conservation propaganda. The more active the creative search of the millions is, the more initiative there is in this matter and the more friends nature has, the more extensive our forests will be and the cleaner the water of rivers and lakes will be. Concern about nature conservation is a matter of every Soviet individual.

7807
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USE OF STARCH PLANT WASTE WATER FOR IRRIGATION ENCOURAGED

Minsk SOVETSKAYA BELORUSSIYA in Russian 12 Jun 81 p 2

[Article by V. Perepelitsa and M. Gerasimovich, candidates of agricultural sciences: "Without Polluting the Rivers"]

[Text] One of the ways to reduce pollution of the water basin is correct recovery of industrial waste water. The enterprises of the food industry of Belorussia alone discharge about 55 million cubic meters of effluent into the reservoirs every year. This results in pollution of the reservoirs, their overgrowth with vegetation, depletion of oxygen, and consequently, decrease in the fish reserves. At the same time, waste water of many enterprises contains substances that are necessary for the nourishment of agricultural crops.

There are several methods for purifying effluent, chemical, mechanical and biological. The most applicable is biological with the use of agricultural irrigation fields. Waste water of the starch, alcohol and vegetable canning plants can be used to irrigate agricultural crops immediately without preliminary preparation. They are rich in nitrogen, phosphorus, potassium, magnesium and other nutrients. Thus 1,000 cubic meters of general effluent obtained in processing potatoes into starch are equivalent to 3.7 centners of ammonium nitrate, 3.4 centners of superphosphate and 3.1 centners of potassium chloride. Nevertheless, at almost all the starch plants of the republic, the effluent is a source of environmental pollution and does not help the harvest. About 6 million cubic meters of effluent are accumulated in a season of operation of all the republic plants. If it is diluted with water, considerable areas of agricultural crops can be irrigated.

In 1974 our country constructed irrigations fields for the first time in the Sudorov kolkhoz of the Borisovskiy rayon and began to use the waste water of the Veselovskiy potato-starch plant to irrigate hay fields and pastures. About 200,000 cubic meters of waste water are accumulated in the three accumulating ponds during the winter operation of the plant. The waste water is diluted with water from the Berezina River. The DDN-70 sprinkler device waters the perennial grasses. The Belorussian Scientific Research Institute of Farming is studying the effectiveness of watering the agricultural crops with waste water.

As the studies showed, the greatest output can be obtained from the waste water when perennial legumes and grains are irrigated. Whereas irrigation with waste water on grain crops is effective in years with an insufficient supply of precipitation, it guarantees a high addition of the green mass to the harvest of grasses even in the rainy years. Watering and fertilizers also improved the quality of the feed. The content of protein, potassium and amino acids was increased in it.

The use of waste water in combination with mineral fertilizers yields another very important advantage. It increases the duration of cultivating perennial grasses on one field to 6-7 years. At the same time, the plots without watering and fertilizers need to be sown to grass already in 2 years after the use of perennial grasses. Watering with fertilizers consequently significantly saves monetary resources and sowing material. In addition, it promotes stability of the perennial grass harvests over the years and obliterates the unfavorable weather conditions.

The plan provides for irrigation of 170 hectares of agricultural crops in the Suvorov kolkhoz. Nevertheless only 60 hectares of perennial grasses were watered here. In order to irrigate the planned area, it is necessary to have three DDN-70 units and the same number of T-74 tractors. They now only have 1 unit and tractor.

Complete recovery of the effluent of the Veselovskiy starch plant hit another snag. The plant not only processes potatoes into starch, but also corn. Other plants also process it. The technology stipulates the use of sodium hydroxide to extract the starch from the corn. However it is known that sodium hydroxide can have a fatal effect on plants. The plant consequently discharges this effluent to a separate accumulating pond and it is not used for irrigation. A method should therefore be worked out for recovery of waste water that is produced in reprocessing corn into starch.

Since the ministries of agriculture, the food industry and land recovery are interested in solving the problem of the efficient use of the food industry's waste water, the percentage participation of each of them should be defined. The State Committee of the Belorussian Council of Ministers for Environmental Protection should take a definite part in solving the problem. The work should be accelerated in all posssible ways. After the recovery of waste water of the starch plants it will be the turn of the dairy, canning, vegetable-drying and other enterprises which process agricultural products.

Complete recovery of waste water of the starch plants of the republic will permit irrigation of no less than 10,000 hectares of hay fields and paastures and will result in no less than 250 rubles of profit from each of them per year. If one takes into consideration that in the 11th Five-Year Plan the republic will greatly expand construction of irrigation systems, it is important that the planning bodies provide for their construction in the first place in those farms that are located near the starch plants in order to reduce pollution of the environment with waste water. This will significantly curtail the consumption of drinking water and will reduce the danger of polluting the water basin with effluent.

9035
CSO: 5000/32

ROLE OF WEATHER FORECASTING, ENVIRONMENTAL PROTECTION EXPLAINED

Moscow TRUD in Russian 5 Jun 81 p 2

[Interview with Yu. A. Izrael', chairman of the USSR State Committee for Hydrometeorology and Environmental Control and readers of TRUD on the occasion of 5 June World Environmental Protection Day: "Weather for Tomorrow"]

[Text] [Question] The weather reports are firmly entrenched in our lives. Today, for example, no farm will begin to sow without a prediction of the temperature and humidity. But meteorologists not only help those who work in the kolkhozes and sovkhozes. Tell us how the meteorological service participates in economic construction. A. Altunin, brigade foreman of stone masons, Krasnodar.

[Answer] The activity of the power engineering, communications and construction enterprises is tied to meteorological conditions. The success of forestry and agriculture, railroad and automobile transportation, and marine sectors depends on them a lot. After receiving a warning about a drastic change in the temperature, a squall, or fog, high-altitude work is stopped, measures are taken to preserve material valuables, and protection from flooding, avalanches and mud flows is the concern. Aviation cannot operate without a weather forecast.

The dispatcher of the power system, compiling a schedule for the distribution of heat and electricity must mandatorily have a forecast of the air temperature so that surplus power is not generated, or on the contrary, underheating. By using forecasts, the power engineering enterprises in the country annually save about 1.5 million tons of comparison fuel.

Forecasts of meteorological conditions have recently been used to take measures to protect the atmospheric air from pollution. Hydrological forecasts are widely used in the practice of water management planning.

[Question] Why do the meteorologists make mistakes? How are the forecasts compiled? B. Veselovskiy, textile kombinat mechanic, Odessa.

[Answer] The weather forecast is a lot of work by a very large number of people. They make observations at the meteorological and aerological stations, on weather ships, airplanes, with the help of radars and meteorological satellites. The observation network currently includes over 3,000 hydrometeorological stations, thousands of posts and hundreds of meteorological radars. They measure pressure, cloud cover, wind, temperature and air humidity at the earth and at altitudes up to 30-35 kilometers. The data are then processed with the help of computers. They are entered into tables and numerous weather charts. And finally, a forecast is compiled. For this purpose we use pressure field and circulation charts calculated by computer for different atmospheric levels for a period up to 3 days.

We do not have any grounds to reproach the meteorologists for carelessness. Errors sometimes occur. But first of all because (short-term weather forecasts are right 85-88% of the time) the atmospheric processes are extremely complicated. It is especially difficult to make a forecast in the zones that are on the boundaries of warm and cold: for example, a cyclone shifts only several degrees and the populated area is in its warm zone and instead of the predicted frosts, a thaw occurs. It is very difficult to predict local phenomena. Showers or thunderstorms in summer have a"spotty"nature. In Moscow, in the region of the VDNKh [Exhibition of Achievements of the USSR National Economy] it can be pouring rain while the sun is shining in the center of town. It is very complicated to predict local weather with accuracy to several kilometers. Where this is necessary (for example, at the airports) a lot of additional equipment is installed.

Weather forecasting belongs to the section of the most complicated tasks of science, and the longer the period it is compiled for, the more complicated the task. It is no accident that month-long forecasts are only correct in 60-65 cases out of 100. The decisions of the 26th CPSU Congress make special note of the need to perfect methods of weather forecasting. Our meteorologists are currently working on this.

[Question] It is known that in a number of oblasts of our country units are operating which protect the harvests from hail. How is this done? A. Kushnir, associate professor of medical institute, Kishinev.

[Answer] Today valuable agricultural crops are protected from hail in all the southern republics of the country on an area of about 7 million hectares. The economic effect of this service which saves the harvest of grapes and fruits is from 70 to 100 million rubles per year. How is hail protection implemented? Artillery weapons taken from operation or especially developed small rockets are used for this purpose. Since hail clouds have to be shot in densely populated areas, housings have been made for the projectiles which on explosion break up and practically no fragments are left. The projectiles or rockets carry a special reagent, silver iodide into the clouds and the foci of hail generation. The silver iodide creates artificial crystallization nuclei which results in rapid falling of rain or hail and the hailstones can no longer grow to large dimensions.

Essentially the same technology is used to artificially induce rain. Clouds are seeded from airplanes or with rockets with crystals of artificial ice or silver iodide. Water drops condense on them and they fall in the form of rain. Experiments are now being conducted to disperse fog at airports and to artificially produce additional precipitation in the plain regions of the Ukraine, Georgia, Armenia and certain other regions. The technique of extinguishing forest fires with artificially induced precipitation which was developed by the Main Geophysical Observatory of our committee has already been in use for several years.

[Question] What is being done to reduce pollution of the environment? What will be the direction of this work? A. Babenkov, mechanic of the plant "Kuzbassradio," Belovo.

[Answer] A special national service of observation and monitoring of the environmental pollution level has been functioning in our country for several years already. It was organized by the State Committee for Hydrometeorology and Environmental Control jointly with the interested ministries and departments. We are now intensively working on standardization and limitation of emissions of harmful substances. We are formulating standards for maximum permissible emissions (MPE) for each enterprise separately. The agencies of the State Committee for Hydrometeorology and Environmental Control are responsible for monitoring the observance of these standards.

Monitoring is necessary of course. But I would like to recall that we will only be able to completely eliminate environmental pollution when each enterprise operates on a waste-free or low-waste plan for production processes. Their basic scientific and technical principles have been worked out for the majority of national economic sectors.

[Question] We, the residents of Baku, are happy to note that the Capsian Sea is becoming cleaner from year to year. The water is more transparent and there are fewer oil spots. How was this done? O. Agayev, brigade foreman of impregnators of the 50th Anniversary of the Azerbaijan Komsomol Electrical Machine Construction Plant, Baku.

[Answer] Twice in recent years, the USSR Council of Ministers has made decisions to take special measures to protect the Caspian from pollution. New treatment facilities, sewage systems in cities located in the basins of the Volga and Ural were built, and 44 water protection facilities were set up in Azerbaijan alone. By 1985, discharge of untreated domestic and industrial effluent into the Capsian Sea will be completely stopped. Technological equipment is being developed and put into operation to prevent water pollution during the operation of offshore oil and gas fields. Construction has been completed of a dam in the Gulf of Kara-Bogaz-Gol which should slow down the dropping level of the Caspian Sea. Since 1975 its northwest water area has been declared a preserve.

[Question] Nuclear power engineering develops more each year. What is the influence of nuclear power plants on the environment? L. Gureyeva, foreman of the plant of electric-vacuum instruments, Voronezh.

[Answer] Nuclear power engineering is really developing very rapidly in our country. Whereas in the beginning of the 1970's the specific weight of electricity generated by the AES did not exceed 1-3%, after the end of the 10th Five-Year Plan it was 8%, and in the future will be 20%. An important advantage of nuclear power plants is that their emissions do not contain any chemically active reagents. Nuclear power engineering also does not represent a danger from the viewpoint of radioactive emissions or contamination with radioactive products. Calculations show that its adverse effect on the environment is a thousand times lower than the effect of conventional thermal power stations.

Modern AES have reached a high degree of equipment containment and purification of emissions of radioative contamination. Detailed examination of the entire cycle, from ore extraction to power production, proves that the dose of local radiation at all stages does not exceed several percents of the dose from natural sources.

I would like to recall that the modern safety systems at nuclear power stations in our country are so advanced that in all the time they have been in operation, there has not been a single accident accompanied by radiation damage to the environment or the population's health.

[Question] All of us live on one planet and our environment has no borders. Therefore it is difficult to engage in environmental protection in the framework of one state. I would like to know how international cooperation in this area is developing? A. Misheladze, electric welder of the plant of gas apparatus, Tbilisi.

[Answer] We view environmental protection as one of the major social and economic problems whose solution is of interest to people on the whole planet.

In 1977, on the initiative of the USSR, a convention was developed and signed to ban military or any other sometimes hostile use of means of affecting nature. In 1979, again on the initiative of the Soviet Union, a European high level conference took place in Geneva on the problems of environmental protection. A convention was signed for transboundary air pollution at great distances, and a declaration on low-waste and waste-free technology. A new and important initiative of the USSR is the resolution adopted by the 35th session of the U.N. General Assembly "On the Historical Responsibility of States for Preservation of Nature for the Present and Future Generations."

The Soviet Union participates in the activity of a number of international organizations and programs which are working in the field of environmental protection. We have extensive and fruitful ties in environmental protection both with the socialist and capitalist countries. The 26th CPSU Congress set the task: "Intensify protection of nature, the earth and its depths, atmospheric air, reservoirs, and the animal and plant world." By common efforts we must preserve the beauty and cleanliness of the earth, sky and world ocean for the present and future generations.

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ROLE OF SMOKESTACKS IN ENVIRONMENTAL PROTECTION

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 2, 1981 pp 75-76

/Article by V. Aspandiyarov, candidate of technical sciences and associate professor, and Zh. Khaydarov, engineer/

/Text/ The choice of the height of smokestacks for industrial objects is determined by the total discharge of noxious substances and ash. At the present time, large thermal electric power stations have, as a rule, several supertall stacks, as a result of which the smoke is completely "dissolved" in the air and there is a reduction in the concentration of noxious substance over populated regions. In a word, the taller the stack, the less gas and dust there are in city air.

However, smokestacks have now reached their limit as far as height is concerned. The cost of constructing them is also high, and sometimes reaches the cost of the construction of the entire thermal electric power station.

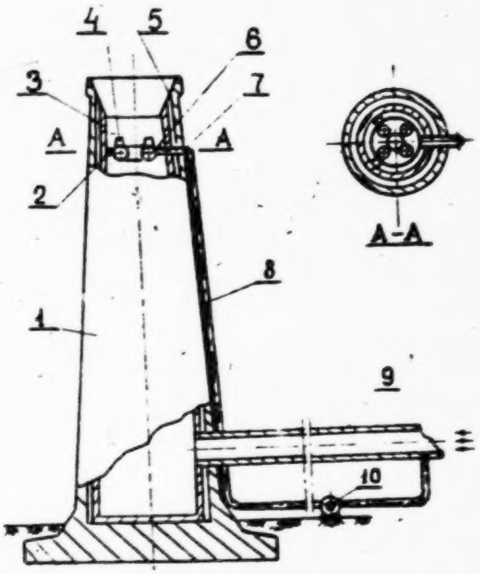
Another factor to consider is what if an electric power station is built near an airport? In this case a high smokestack can be the cause of a disaster. This has been known to happen.

Guaranteeing flight safety is, of course, a matter of primary importance. Aeroflot's legal requirements for height limitations of industrial structures must be observed completely. On the other hand, however, we also cannot allow a high concentration in the air of substances that are dangerous to health, which is what happens when short smokestacks are used.

So, an alternative appeared. The short smokestack did not satisfy the requirements of Gossaninspektsiya /State Sanitary Inspection/, while the construction of a tall one was prohibited by the requirements for aircraft flight safety. The teachers and students at the Alma-Ata Power Engineering Institute took it upon themselves to solve this problem, and their joint creative efforts met with success. An original smokestack design that has been awarded a patent by the USSR State Committee for Inventions and Discoveries was proposed.

What was it that the students and teachers suggested? How did they succeed in increasing the height at which smoke is discharged without changing the size of the stack?

As has been discovered, discharging smoke at a low height is related to "clogging" of the mouth of the stack. This occurs because the flues "diligently" inject into the stack smoky gasses that it is not capable of letting through. Static pressure builds in the stack and the gasses begin to filter through the lining, which leads to its rapid destruction. Cases are known where a smokestack designed for a service life of 30-40 years have become useless in 3-4 years.



The students and teachers at the power engineering institute suggested that a device creating additional discharging power be installed in the upper part of a stack. It is in the form of a jet pump, the housing of which is the stack's mouth with its diffusor, while the outlet is an annular distributing manifold with removable nozzles that is installed inside the stack in direct proximity to the mouth. The manifold can also be installed outside the smokestack, while the removable nozzles with the conducting sections of the conduits are installed inside it.

The device, the purpose of which is to act as a gas discharge accelerator, does not create additional loads in the smokestack's mouth and can be used in stacks of any capacity and productivity rating. This makes it possible to reduce the static pressure in a stack and concentrate the noxious impurities, as well as increasing the height at which the gasses are discharged and improving their flow conditions.

The figure on this page shows a cutaway view of the proposed smokestack design. It consists of the barrel (1), made in the form of a confusor at the end of which there is a diffusor (5). The gas flue (9) is connected to the upper part of the barrel by means of a gas conduit (8) in which there is a forced-draft fan (10). In the upper part of the stack, the annular distributing manifold (6) with its removable nozzles (4) are attached by means of bars (2) and the delivery section of the gas conduit (7). The bars and the delivery section of the gas conduit are installed in the diffusor or the line (3).

The device operates as follows. From the gas flue, part of the gasses are sent into the gas conduit with the help of the forced-draft fan and are then injected into the annular distributing manifold through the gas conduit's delivery section. The basic gas flow from the gas flue is directed into the smokestack's barrel. The outlet, which consists of the annular distributing manifold and the removable nozzles, discharges the gasses into the atmosphere under pressure. Thus, there is a barrelless increase in the gas discharge height of 50-100 meters or more. This gives a great economic saving.

As is known, a tall smokestack is an expensive engineering construction. Practice has shown that the construction of a stack 320 meters tall costs the state several million rubles. The basic rule is that the taller the barrel, the higher the cost.

According to the most modest calculations, the new smokestack design will make it possible to save about 1 million rubles for each such object. The expenses for the introduction of this innovation are not great and do not even have to be taken into consideration, for all practical purposes.

The invention of the teachers and students at the Alma-Ata Power Engineering Institute should attract the attention of planning organizations since it is of great national economic importance and can be of practical use in the construction of many industrial objects. The construction of smokestacks with the new design is of particular importance for cleaning the air basin of this republic's capital. By all calculations, they can discharge smoke above the inversion layer of the atmosphere, which prevents clouds of gasses from coming in contact with the layers of air near the ground.

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11746
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APSHERON TRASH PROCESSING PLANT

Baku VYSHKA in Russian 31 May 81 p 2

/Article by S. Gopanyuk: "The Work Does Not Join Ends"/

/Excerpt/ A not entirely ordinary plant is being built on Apsheron, not far from the settlement of Balakhany. It will be able to process annually 400,000 tons of household waste, nearly half of what is hauled from the city to the dump. Metal objects will be removed from it by electromagnets. The remainder of the waste will move along production lines, will be pulverized, sifted and will undergo biological changes in special thermal drums. In all 60,000 tons of fertilizers and 2,000 tons of metal a year--such is the volume of the future output of the plant.

Such enterprises are already in operation in Moscow, Leningrad and Alma-Ata. In addition to the salvaging of waste products, they rid the environs of cities of dumps, and they provide a net income. The Baku plant, according to the plan of specialists of the Moscow State Republic Institute for the Planning of Municipal Construction, will annually yield a profit of 600,000 rubles and in 5 years will recover the expenditures connected with its construction.

7807
CSO: 5000/30

BRIEFS

SOCHI EARTHQUAKE--Sochi, 17 April (TASS)--This morning the Sochi Seismic Station recorded an underground tremor. Its epicenter was in the sea, not far from the shore line between Sochi and Tuapse. In the health resort camp of Makopse the tremor was felt with a force of 5. In Lazarevskiy Rayon it was felt with a force of 4 and in the central region of the health resort city it was felt with a force of 3. There were no damage or injuries. /Text/ /Moscow KOMSOMOL'SKAYA PRAVDA in Russian 18 Apr 81 p 4/ 7807

IRKUTSK EARTHQUAKE--Irkutsk, 22 May (TASS)--Today at 1351 Moscow time an underground tremor with a force of up to 5 was felt in Irkutsk and its environs. As specialists of the Irkutsk Seismic Center reported, the epicenter was located in the region of Southern Baykal 90 km to the east of Irkutsk. The earthquake, which was also felt in a number of other cities of Irkutskaya Oblast and the Buryatskaya ASSR, caused no injuries or damage. /Text/ /Moscow PRAVDA in Russian 23 May 81 p 6/ 7807

SAKHALIN, KURIL ISLANDS QUAKES--Yuzhno-Sakhalinsk, 21 June (TASS)--This morning inhabitants of the mining settlement of Mgachi in the northern part of Sakhalin Island were awakened by a loud rumble. An underground tremor followed. The ground movement came to 4-5 on the Richter scale. The earthquake damaged some buildings. The same day an underground phenomenon also appeared in the South Kuril Islands. The epicenter of the earthquake was located in the Pacific Ocean to the east of Shikotan Island. In the settlement of Malokuril'skiy it was felt with a force of 4. Neither earthquake caused injuries. /Text/ /Moscow PRAVDA in Russian 22 Jun 81 p 8/ 7807

EARTHQUAKE-PROOF DAM--Dushanbe, 23 May (TASS)--How do you build a dam 335 m high in an area of strong earthquakes? Scientists of the Institute of Seismological Construction and Seismology of the Academy of Sciences of Tajikistan have provided an answer to this question. They have substantiated the prediction of seismic activity on the construction zone of the Rogunskaya GES, the largest in Central Asia, on the Vakhsh River. The construction of the 3.6 million kW hydroelectric power station is called for by the decisions of the 26th CPSU Congress. The prediction of the seismologists is based on the study of the statistics of underground shocks in the region and on the evaluation of the information which is received from a vast network of seismic stations. The calculation of the potential strength of underground tremors is the basis for the design of the tall dam, as well as of the building of the GES, which for the first time in the practice of domestic hydraulic construction will be sunk 60 m into the hearth of the rock foundation. The great amount of experience gained by scientists during the construction of the Nurekskaya

GES on the same Vakhsh River provides assurance of the guarantee of the seismic stability of the structures of Rogun. /Text/ /Moscow PRAVDA in Russian 24 May 81 p 3/ 7807

LEAD, ZINC COMBINE FACILITIES--Ust'-Kamenogorsk--Much attention in Ust'-Kamenogorsk is being devoted to the construction of environmental protection facilities. During the years of the past five-year plan the collective of the Altaysvinetsstroy Trust put into operation 18 large facilities with a value of 58.5 million rubles. Among them are complexes for the treatment of sewage, the trapping of dust and the recirculation of water at the lead and zinc combine. /By B. Pavlov/ /Text/ /Moscow STROITEL'NAYA GAZETA in Russian 3 Apr 81 p 2/ 7807

OIL SPILL BARRIER--Ufa--The series production of the Anakonda floating barrier, which is designed to prevent the spilling of petroleum products during the loading and unloading of oil tankers and refueling, has been started for the first time in our country at the Ufa Order of the October Revolution Plant of Industrial Rubber Items imeni M. V. Frunze. The barrier consists of 15 interchangeable sections 5.6 m long. Foam plastic floats 30 cm in diameter are contained in the rubberized fabric cover of the sections. A chain, which ensures the stability of the structure in the water, is hung below, in a pocket made from rubberized material. The length of one set is 84 m, but the barrier can also have a considerably greater length, since the sectors are easily interconnected. By means of anchored buoys and guy ropes the Anakonda surrounds the ship being loaded or unloaded and does not allow petroleum products, a portion of which are inevitably lost during handling, to spread over the surface of the water. After the completion of the loading or unloading a special petroleum collector approaches the ship and pumps out the spilled petroleum products, which after refining are used again. The tests conducted at the Odessa Oil Tanker Port have shown excellent results. With a sea of 2 and a wind speed of 6 m/sec the barrier contained a layer of petroleum up to 15 cm thick. This year all the oil tanker sections of the ports of the country will be equipped with the Anakonda floating barrier. /By M. Sadretdinov/ /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 2 Jun 81 p 2/ 7807

EARTHQUAKE PROTECTION--The new residential buildings in the cities of our republic are acquiring yet another version of "self-protection" from earthquakes. The next defense position against the elements was suggested by the specialists of the Dushanbe planning institute "Tadzhikgiprostroy." Here they are developing a plan for an experimental nine-story large-panel building with disconnectable links, special assemblies for connnecting structural parts that during an underground attack will attenuate the interrelationship and at the same time, will disperse the force of the jolts. The designs of this building will reduce the seismic loads two-fold. There is another no less important advantage here: the consumption of scarce steel in this structure will be reduced by 5-7 kilograms per square meter of total area. If one takes into consideration that the nine-story building recommended itself well in Dushanbe, then the advantage of this version is obvious. Seismically resistant construction continues to be perfected in the republic. Through the efforts of the seismological scientists and planners, the residential buildings, industrial and other national economic facilities are becoming highly seismically reliable. [By correspondent of TadzhikTA] [Text] [Dushanbe KOMMUNIST TADZHIKISTANA in Russian 7 Jul 81 p 1] 9035

CSO: 5000/32

ENVIRONMENT MINISTER HANSEN DISCUSSES ISSUES

Oslo ARBEIDERBLADET in Norwegian 3 Jul 81 p 6

[Article by Pal Nordenborg: "The Silent Environment Protection Revolution"]

[Text] The wood mouse is protected game, according to the law; if only it does no damage. This applies to the wolf as well, now the only one of our wild animals in danger of dying out, though a roving wolf or two from Finnish or Russian forests keep alive a slight hope that it will be possible to save the wolf as well.

Rolf Hansen enjoys himself when he has the opportunity to say something about what the environment protection ministry has been doing since it was established by the Bratteli government in 1972. Despite Alta [a hydroelectric power project in Northern Norway] and the fight over the watercourses, this is an area where the government has let favorable winds blow freely. "Big game and the predators are an example of what successful modern game management can be. Many big game and predator stocks were endangered 10 years ago. By means of bans on hunting and through protection they have now been built up again. And there is no reason to doubt that this can be done in other areas as well," he says to ARBEIDERBLADET.

Silent Revolution

"A revolution has taken place in the matter of environment protection during the 1970s," says the environment minister. He believes that many still see environmental protection matters as causes that must be fought through by means of strong action. But it is easy to overlook the fact that a silent revolution has taken place, he thinks.

"I do not underestimate the role protests to protect the environment can play. But the breakthrough for a new awareness of environemnt values will be found in finding solutions to concrete tasks. The chief message is that environmental protection is a task for all society. This requires cooperation," says Hansen.

Everybody knows, thinks Hansen, that regard for the economy plays a role, even though there are some absolutes which cannot be abandoned. Among these are preservation of representative species of animals and breeding areas for them. Today, the moose is found all over the country, and the red deer as far north as Malselv. Bear and wolverine are also increasing in numbers.

The political guidelines, the basic legislation, and administrative arrangements were established last spring in the Storting for an extensive environmental protection effort for the entire coming decade. The largest court cases have been concluded. What remains is a revision of the environmental protection law, aimed at some small changes. Also remaining is follow-up work to be done in connection with the new planning law.

If there should be a nonsocialist election victory in the fall, this is, by the way, a law which the Conservatives, supported by the Center Party and the Christian People's Party, have already decided to withdraw.

Rolf Hansen questions how this is to be done, however. In this matter, he says, the nonsocialist parties are not in touch with their own grass roots. And he is quite certain that they will come into conflict with the thorough and lengthy work on which this law is based.

Land Owner Interests, Primarily

When the Conservative central board approves of withdrawal by an eventual Willoch government in the fall of the planning law in order to start a new useless analysis, the Conservatives will once more advocate torpedoing an important democratic reform which gives the people influence upon plans by which they are affected, says Rolf Hansen.

He suspects that the Center Party and the Christian People's Party have not gone along with the Conservatives in this matter without considerable doubt.

The government promoted the planning law, now passed by the Storting with Labor Party and the Socialist Left party [SV] votes, because it simplifies resources and area uses. Earlier legislation is coordinated; it provides local control, adjustment of living conditions, justifiable administration of natural resources, and, not least, presupposes contributions by the public.

All nonsocialist parties in the Storting voted against the law in its entirety. The Conservatives, the Christian People's Party, and the Center Party based their opposition among other things on the interests of the landowners not being adequately protected. The Liberals opposed the law because their proposed changes in certain paragraphs of the law were voted down.

Rolf Hansen also refers to the fact that the law has gained the general approval of experts and municipal, county, and state authorities. In his opinion it is rather striking that the three nonsocialist parties during the Storting debate proposed that the law proposal be sent back to the government. In reality, the planning law was based upon the mandate issued for the analysis by the Korvald government in 1973.

More Costly Without Planning

What people have much trouble with today are building codes. The resentment of planning that often arises is often connected with adherence to building codes and accomplishment of construction tasks. In his opinion, this section of the legislation must be constantly reviewed. The purpose of the planning law is that of creating balance among the various area use demands, such as for housing, social institutions, industry, recreation, and environmental considerations.

The most costly of all for a municipality is not planning for area use. This brings upon the municipalities constant conflicts, says Hansen, who thinks that after the building law of 1965 too great expectations were anticipated from the general plans. They easily ended up in a drawer. But the fact is that municipalities do not have sufficient areas to get along without the municipal plan.

"I am convinced that the municipalities and the individual will get along much better when municipal councils are enabled to introduce planning, as the new law presupposes," says Rolf Hansen.

Hunting for the Public.

He sees the environmental policy landscape as follows:

"Without the will to take conscious attitudes toward nature and environmental protection things go wrong. I have difficulty in discovering whether the nonsocialist parties have any common environmental policy at all. In recent years the interests of landowners have been their theme, including that of the Liberals. I cannot imagine an environmental policy which, at the cost of public interests, speaks only for the interests of the landowners.

"My experience tells me the reverse: that a well considered environmental and resources policy does not conflict with the real interests of the landowners; on the contrary, it benefits them."

Rolf Hansen also recalls that the question of increasing public access to hurting small game engendered strife in the Storting. That time as well, the Labor Party and the Socialist Left saw to a better arrangement. The new game law is in principle based on voluntary arrangements. If the landowners oppose this, however, the game board has the authority to determine that hunting licenses are to be issued.

Now it is the Salmon

It is not unlikely that vacationers, who will soon be on their way, will give a thought to the environment minister, who, by the way, will soon depart for the West country for fjord fishing. If anyone should meet him on the way, he could produce the information that 51 national parks have been established in mainland Norway. Only one national park, that of Saltfjellet, remains to be established. Further, 28 landscape protection areas, 303 nature reserves, and 225 natural monuments have been established. They were established for the purpose of protecting rare animal life or special scenery. The protected area is relatively modest in extent, encompassing no more than 7,500 square kilometers, or a little over 2 percent of the land area of Norway.

Though preservation is in most cases undertaken by the municipalities the state has in some cases found it necessary to preserve such areas, such as for example the so-called Skerries Park, an area of about 9000 decares between Tvedestrand and Lillesand.

To salmon fishermen he will say that if efforts to reduce catches are unsuccessful the result will be that not a single Norwegian spawning salmon will enter any of our 250 salmon rivers. Lack of rain and long periods of drought, he will say, are things the environment ministry cannot control. It is another matter, however, how the reduced inroads upon the stock is to be distributed among the various interests, such as drift net fishermen, landowners, sport fishermen and others.

This is a political question where it is a matter of distributing the results of protection measures in the most reasonable way among the various groups.

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GOITER AT EPIDEMIC LEVELS IN KASTAMONU PROVINCE

Istanbul MILLI GAZETE in Turkish 14 Jun 81 p 10

[Text] Ankara (ANKARA AGENCY) -- In and around Kastamonu's Azdavay District, 90 percent of the population is found to be suffering with goiter.

Residents of the villages around Azdavay face the threat of goiter from birth owing to inadequate iodine in the drinking water and certain nutritional factors. The villagers learned as the result of health surveys that the large swellings on their throats are "goiter" and asked that measures be taken to combat this steadily-spreading disease.

After identification of the goiter problem in the area by Dr Mehmet Ali Aksoy of the Azdavay clinic and government Dr Enver Unver, surveys of the villages began. The surveys revealed that villagers from age 7 to 70 are suffering with goiter.

"Public Apathetic Toward Disease"

Dr Mehmet Ali Aksoy and Dr Enver Unver described the disease as follows to an ANKA [ANKARA AGENCY] reporter:

"We found that the goiter so widespread in the area has existed for a long time and that the large majority of the people have it. Despite the large swellings on their throats in almost all of the villagers, they do not consider it a disease, but a normal part of their lives. These citizens came to us with other problems and, although they showed us the painful enlargements, they did not speak of them as goiters because they do not consider goiter a disease."

Animals Not Exempt

It is thought that the origin and development of the disease, known to be caused by local conditions, will be clarified following laboratory tests. Samples were taken from springs, wells and other sources of drinking water in and around Azdavay and were sent to the nuclear medicine institute of the Cerrahpasa Faculty of Medicine in Istanbul.

Meanwhile, nutritional symptoms of the iodine deficiency in the water, thought to be the cause of goiter in the area, were found to affect animals as well as humans. The "New Jersey" type cattle which have been brought into the region reportedly have a shortened life span and, over time, lose their own characteristics and revert to the local breed.

As the result of health campaigns, the villagers learned that the enlargements on their throats and other parts of their bodies were goiter and asked for assistance. The villagers said that they were always "made fun of" when they went somewhere else because of the abnormal appearance of their throats and that they also suffer shortness of breath and constant nervous tension.

Three-Kilo Goiter

In the Azdavay village of Aslanca, Recep Kahya spoke of the nearly 3-kilogram goiter on his throat as follows:

"I have had this goiter on my throat for as long as I can remember. When I walk fast or climb a hill, it is as though my breath will stop. I often have violent headaches. And as for nerves, I am extremely nervous when I have a headache and I cannot see a thing. I am always bumping into things.

"Before I even said anything, the doctors who examined me asked whether I was nervous, had headaches or was short of breath. I told them I did. They said all this came from the goiter on my throat. I should know where it's from."

"Those Improved by Surgery Get Sick Again If They Live Here"

The villagers say that the number of women who have died in childbirth because they cannot breathe is "a lot," though they cannot give a definite figure. The villagers also note that infant mortality and death in childbirth rates are high in this mountainous region also because midwives cannot get in to attend the birth, especially in the winter months.

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20 August 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 320

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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20 August 1981

WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

No. 320

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FEDERAL REPORT SAYS EVIDENCE LINKS HERBICIDES, MALADIES

Melbourne THE AGE in English 10 Jul 81 p 3

[Article by Paul Chadwick]

[Text]

A Federal Government report contains scientific evidence linking cancer, birth defects and psychological disorders to chemicals in sprays used in Vietnam and till used in Australia.

The report lists studies of humans and animals exposed to herbicides and pesticides, includig Agent Orange, that have recorded foetal deaths skin damage, increased rik of soft tissue cancer and adverse effects on liver, kidney, skin, breathing, appetite and the central nervous system.

It is "highly probable" that Australian troops in Vietnam frequently did not follow safety precautions when handling chemicals and "it may be assumed" that many men did not appreciate the possible "adverse health effects resulting from excessive exposure," the report says.

The report lists among its references studies by the US National Academy of Sciences; Swedish researchers on whose work the Victorian Government study of 2,4- Dand 2,4,5-T is based; the World Health Organisation; the US Air Force Occupational and Environmental Health Laboratory; the US Department of Health, Education and Welfare.

The Minister for Veterans Affairs, Senator Messner, said yesterday there was "no credible evidence at this stage of the game that indicates that there is any connection between Agent Orange and any disabilities".

Senator Messner, who returned from a three-week fact-finding visit to the US last Saturday, told reporters this week that herbicides were not the cause of veterans' physical and psychological problems. Rather, they were suffering from a "nervous stress syndrome" resulting from the trauma of war.

The existence of the Government report, 'Pesticides Used in Vietnam Hostilities and their use in Australian Agriculture: A Comparative Study', was revealed in answers by the Minister for Defence, Mr Killen, to questions on notice by Labor MHR, Mr Clyde Holding. A copy has been supplied to 'The Age'.

A spokesman for Mr Holding, who is in the Northern Territory, said last night that Senator Messner was "at complete odds with two major Government departments" and his position was not credible. "Not only does Senator Messner not understand the issue, but even worse, he is complicit in the Government's cover-up," the spokesman said.

The report has a disclaimer on its title page which reads: "This report contains background information and does not in any way representthe views of the Government."

It says there is no evidence that the chemical constituents of pesticides used in the war were different from those used for agricultural syraying, but application and concentrations differ. The benefits of pesticide use should not be eclipsed by the "alleged dangers attributed to application under conditions of war in Vietnam".

The report lists scientific research into the effects on humans and animals of 2,4-D and 2,4,5-T. These chemicals in equal parts made up Agent Orange and were present in agents Purple, Green and Pink. The lethal contaminant of 2,4,5-T is dioxin or TCDD. It is blamed in the report for skin, liver, heart, fat, urinary, respiratory and sensory disorders. It also is a reported cause of depression ,lack of drive, emotional and sleep disorders and diminishedlibido.

The Victorian Vietnam Veterans' Association's president, Mr Adrian Bishop, said yesterday that Senator Messner had a fixation with Agent Orange. Veterans were claiming multiple exposure effects from Agent Blue (arsenic-based), melathion, dieldrin, paraquat, and other chemicals.

CSO: 5000/7580

EPA MAPS TOUGH WASTE DISCHARGE POLICY FOR MELBOURNE

Melbourne THE AGE in English 11 Jul 81 p 16

[Article by Andrew Bolt]

[Text]

Industry in Melbourne's western suburbs will have to phase out mercury discharges during the next five years, under a draft policy developed by the Environment Protection Authority.

The draft policy also recommends that an adequate sewerage system be developed to take in the 10,800 allotments in the policy area which are unsewered. The sullage water and septic tank effluent from these allotments were causing high bacterial levels in some of the creeks in the area, as well as a high level of nutrients and low levels of dissolved oxygen.

The draft policy estimates the cost of providing a sewerage system in the area to be $20 million It also recommends that the Government pay for a water-quality management programme for the policy region, which would cost about $50,000 a year.

The EPA's senior water quality officer, Mr Ian Coles, has said that the authority took a tougher stand in its revised draft policy than in its original draft in 1975.

Mr Coles said the clampdown had affected heavy-metal emissions in particular, although requirements had been relaxed a little for Stony Creek, which had since been lined with concrete for much of its length. He said the authority realised there was only so much it could do to "rehabilitate" a concrete creek.

The draft policy is expected to go before Cabinet early next year, after the authority has assessed public submissions.

The revised draft environment protection policy for the surface water of the western metropolitan region aims to clean several small creeks in the area. The draft policy imposes strict limits on discharges of heavy metals in particulars, which were affecting Kororoit and Stony Creeks.

The EPA said a recent study of the Kororoit Creek had shown that average concentrations of mercury, copper, chromium, zinc and lead were up to three times higher than the estimated threshold level beyond which sensitive species are killed.

CSO: 5000/7580

STATES' BATTLE OVER MURRAY, WATER RESOURCES INTENSIFIES

Canberra THE WEEKEND AUSTRALIAN in English 11-12 Jul 81 p 5

[Article by Russell [illegible]eider]

[Text] THE bat[illegible] for water resources is looming as a major political issue.

Two States — NSW and South Australia — are going for the jugular in their battle over the use of the River Murray.

And councils, farmers and businessmen are making sure the water question isn't shelved.

This pressure will result in growing federal tensions as the Cabinet, torn between political popularity and economic restraint, faces clashes on the allocation of limited cash.

National Country Party MPs will be pressed by their supporters to force Canberra to take a stronger stand over water control.

The importance of the issue was illustrated in a meeting in the central north-western NSW town of Bourke this week.

The Acting Prime Minister, Mr Anthony, spent the day at a meeting of rural councils and water users from NSW, Queensland and South Australia to discuss a radical scheme to divert the north-eastern rivers inland to unclog the choked Darling-Murray system.

Mr Anthony was joined by the NSW Minister for Water Resources, Mr Gordon.

They faced a crowd of more than 200 people determined to force more political attention on water usage.

The meeting also set up a National Water Resources Association — a lobby group to press for more government money to expand water supplies.

The association elected a committee of 23 to examine proposals for water development.

One of the association's main aims is to press governments to agree to provide the money for the radical scheme to divert the Clarence River, in northern NSW, inland across the Great Dividing Range.

This would provide control for the flood-prone Clarence, and boost water flow in the Darling-Murray system.

But it would be enormously expensive, ranking at least with the Snowy scheme, and possibly costlier.

It would require a complex system of dams, pumping stations and tunnels to move the water uphill.

The NSW Government is already considering the scheme, regarded as a pipedream by some, but an equally emotive issue to water-starved farmers and graziers inland.

The trouble is cost.

The NSW Water Resources Commission estimates show any diversion scheme would be between two and 10 times the cost of building more dams on the Darling.

But a number of NCP electorates would be affected — and would benefit — from the scheme, and the mood of the meeting showed that the NCP would come under pressure to back it.

I understand Mr Anthony believes a series of dams on the Darling would be a preferable short-term alternative to the diversion.

But he does see the diversion scheme as an interesting long-term possibility.

But no matter how realistic Mr Anthony may be, he cannot escape the pressure that will be placed on him and his colleagues from their own supporters to push hard for the money to build the dams.

The Government is already in trouble with farmers for failing to live up to its promise to spend more on water projects.

During the 1977 election campaign, Mr Anthony promised that the Government would provide up to $200 million over five years for dams and similar water conservation projects.

So far it has spent only $77 million — a shortfall obvious to the rural community.

Mr Anthony justified the failure to provide as much as was promised by the overall economic problems and the need for restraint, a justification which did not cut much ice with his audience.

But he also made it plain his party would push its Liberal partners to divert funds to water projects as soon as the money became available.

The reason is simple: increased water supplies will help rural prosperity, assist overcoming unemployment in country towns, and lead to an improved social environment.

Liberals see cost as the problem. Most water conservation projects are immensely expensive, and usually the direct returns — from charges to irrigators — are less than the cost of maintenance, let alone capital investment.

The larger Liberal section of the Government, while acknowledging the national importance of water projects, is reluctant to spend money on them — and points repeatedly to the failure of the Ord scheme in Western Australia to justify its reluctance to spend.

Spelling out his own intentions last week, Mr Anthony said:

"Australia must reappraise its priorities for water development. The development of water as a key resource in national development must become a reality.

"If governments can entertain the idea of finding massive amounts of money for something as transient as hosting an Olympic Games or an Expo, then I find it hard to accept that we can't find the money for projects of permanent and increasing value and importance."

Mr Anthony has never run from a Cabinet fight when his own interests were involved. The water fight will be an interesting one, indeed.

CSO: 5000/7580

WA GOVERNMENT MOVES TO GIVE LANDOWNERS VETO OVER MINING

Perth THE WEST AUSTRALIAN in English 11 Jul 81 p 4

[Text]

The proposed amendment to the 1978 Mining Act would restore the provisions of the 1904 Act governing the rights of private land-holders.

Government MPs had been worried that private land-holders would not be adequately protected under the provisions of the 1978 legislation.

Some thought it would be easier under the new legislation for miners to obtain rights to land under cultivation.

The Primary Industry Association mounted a long and strong campaign against the 1978 legislation and the National Party announced plans in April to amend the legislation with the aim of protecting private land-holders.

The Premier, Sir Charles Court, said yesterday that the Government had been worried about cases of misuse of the right of veto.

But the Government wanted to protect farmers who genuinely wanted to continue farming.

It would introduce an amendment when Parliament resumed next month restoring the principles contained in the 1970 amendments to the 1904 Act.

COMPENSATION

The Government would also amend provisions dealing with compensation for pastoralists.

It proposed to give specific power to the warden to fix compensation in the absence of agreement between the parties before mining started.

This Power would be used if the warden was satisfied that mining other than prospecting or exploration on a mining lease within a pastoral lease was substantial and could result in a signifciant loss of earnings to the pastoralist.

The proposed amendment would be discussed with the Pastoralists and Graziers' Association.

Pastoralists would have the right of appeal to the Supreme Court against the warden's decision.

Government MPs have also approved another proposal to transfer oil-shale exploration from the Petroleum Act to the Mining Act.

CSO: 5000/7580

REPORT ON OCEANOGRAPHY INSTITUTE POLLUTION STUDY

Madras THE HINDU in English 2 Jul 81 p 8

[Article by N. N. Sachitanand: "How Polluted Are Our Seas?"]

[Text] MAN has tended to regard the sea as a universal sink in which the wastes generated by him can be conveniently dumped and forgotten. Only in the past few decades, certain manifestations such as the fouling of beach resorts by petroleum residues and the Minimata Bay incident in which people were struck by paralysis due to consumption of mercury-contaminated fish, have opened man's eyes to the fact that the sea is not an inexhaustible sink for pollutants.

Monitoring of marine pollution has become an important activity for the industrially advanced littoral countries. India, with its immense population and sizable modern industry, pours in vast quantities of waste (see table) into the surrounding seas. On top of this, the Arabian Sea, bordering the country's West Coast, contains the most heavily travelled oil tanker route in the world (see figure), which means considerable chances of petroleum pollution of the Northern Arabian Sea waters.

The National Institute of Oceanography, Goa, has undertaken in the past 10 years several research programmes to monitor the extent of pollution in the seas bounding the Indian shores. One such programme was the Marine Pollution (Petroleum) Monitoring Pilot Project (MAPMOPP) under the framework of the Integrated Global Ocean Station System (IGOSS).

It was a multi-nation project initiated in 1975 and the components included for observation were:

(1) Oil slicks and other floating pollutants;

(2) Particulate petroleum residues;

(3) Dissolved/dispersed hydrocarbons and

(4) Tar balls on beaches.

Indian observations

The Japan Oceanographic Data Centre at Tokyo was nominated the regional data centre for the Indian Ocean region. The Indian observations covered the Arabian Sea and the Bay of Bengal. According to Dr. R. Sengupta, the Regional Coordinator of the project for the Indian Ocean region, the following salient facts have been noticed in the past five years of observations as far as the seas around India are concerned:

(1) Due to the shoreward direction of surface currents during the monsoon months of May-October along the West Coast of India, tar balls from petroleum spills cover the beaches from Kutch to Kanyakumari. About 1,000 tonnes of tar balls were deposited thus during 1975 which were reduced to 750 tonnes in 1976 due to the reopening of the Suez Canal and the consequent diversion of oil tankers to the Mediterranean route. Since, during the rest of the year, the current flows away from the shore, these tar balls are carried back into the sea.

Some of the tar balls are also buried beneath the sand redeposited on the beaches during the post-monsoon months. Thus, while the tourism industry is not affected by these deposited tar balls, fishing is hampered by the floating balls fouling the nets.

(2) Floating tar balls naturally were nearer to the oil tanker routes. The concentrations in the Arabian Sea range from 0 to 6 mg/sq.m. of sea surface and in the Bay of Bengal from 0 to 70 mg/sq.m. The total amount of floating tar balls on the surface at any given time is about 3,700 tonnes for the Arabian Sea and 1,100 tonnes for the Bay of Bengal.

Petroleum residues

(3) Up to a depth of 20 metres, the Arabian Sea waters contain 32.5 parts per billion (average value) of dissolved and dispersed petroleum residues derived from oil spills, refinery effluent, atmospheric fallout and end-products of photo-oxidation and bio-degradation. For the Bay of Bengal, the average content is 24.1 parts per billion.

It was noticed that in the Arabian Sea, the contamination levels near the coast and along the tanker routes were not very different, whereas the difference is very great in the Bay of Bengal. This is probably due to greater harbour activities and intensive nearshore fishing in the Arabian Sea which leads to a greater oil pollution in coastal waters of the Arabian Sea as compared to the Bay of Bengal.

Overall however, considering the magnitude of transportation of oil across the Arabian Sea and the Bay of Bengal, both the seas appear relatively clean. Further, with the deepening of the Suez Canal, the tonnage of oil moved across these waters will decrease considerably in the future

Then again, oil pollution of the sea from bilge washing of tankers is being reduced with more and more ships going in for on-board waste treatment plants and the Load on Top (LOT) system in which one tank in the ship is reserved for washings which are discharged into a shore-based tank.

The future, therefore, does not appear to be bleak as far as the oil pollution of the seas around India is concerned. However, the new pollutants will be the offshore oil wells and new shore-based oil refineries.

As for oil slicks resulting from accidents a number of chemicals have been developed to disperse the slicks. Some of the chemical agents may be toxic to marine life; so they have to be thoroughly tested.

The National Institute of Oceanography has acquired the expertise to test these dispersants. The Institute is also working on identifying certain strains of bacteria which are efficacious in bio-degrading petroleum residues.

Toxic metals

Heavy metals occur in natural sea water and many of these have been found necessary to promote the growth of marine organisms. The heavy metals occurring naturally in sea water are at concentrations of parts per billion. However, due to heavy inflow of industrial effluents into the sea during the past 15-20 years, the concentrations of several heavy metals in certain areas of the world oceans have increased by about one hundred fold.

Such over-accumulation may become harmful to marine life. This is particularly true of metals like mercury, which is considered to be the most toxic. It can not only harm marine animals but, passed along the food chain, can even harm man, as was so tragically proved in the Minimata Bay case in Japan in the Sixties

Studies carried out on the concentration of heavy metals in the marine environment around India by the National Institute of Oceanography and the bioaccumulation of these metals in zooplankton indicate that there is as yet no cause for alarm. Studies carried out by Kurieshy and others of the mercury accumulation in fish in the Arabian Sea and the Bay of Bengal showed that the concentrations were far below the minimum of 0.5 ppm dry weight prescribed by the U.S. and several European countries.

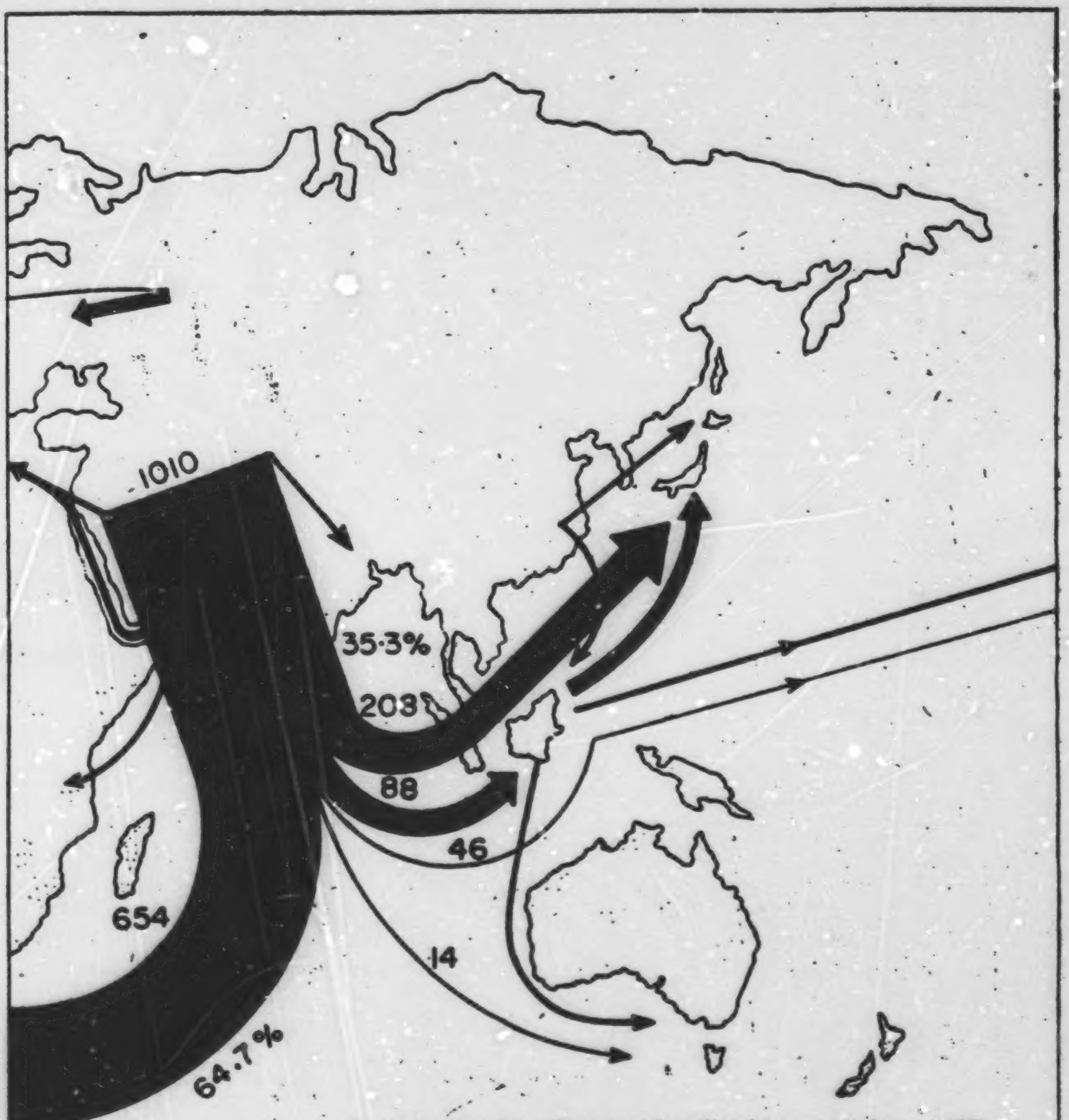
Pesticides

Pesticides are another source of sea water pollution. In India about 77,000 tonnes of pesticides are used every year. It is commonly believed that 25 per cent of the pesticides will finally end up in the sea via river runoffs. The chlorinated hydrocarbon pesticides are insoluble in water but are absorbed by plankton in their body fat. These plankton form the first link of the food chain from the ocean.

However, measurements of DDT and its metabolites in the plankton of Indian coastal waters by NIO scientists have shown that the levels are very low. The total DDT in plankton of the northern part of the west coast of India is somewhat higher than in other regions but even there the values are much lower than the safe limits.

The table gives a fair idea of the man-generated biological and industrial pollutants added every year to the seas around India. Despite all these additions, these seas, except for a few places off metropolitan cities such as Bombay, Cochin, Madras and Surat, are relatively clean. This is because of the diurnal tides which flush the Indian coast twice a day

The tidal range varies from about a metre at the southern tip of the country to about five metres in the Sunderbans and 7-8 metres in the Gulf of Khambat. But whether the marine environment will remain so clean in the coming years in the face of our galloping population and the attendant pollution it generates is doubtful


1010
35·3%
203
88
46
14
654
64.7%

Movement of oil (in million tonnes) from West Asian countries by sea in 1979.

Population and related data for India and some estimates of pollutants entering the sea around India (updated to 1979)

Population		639	million
Coastal population (25% of total)		160	million
Domestic sewage added to the sea by coastal population per year (60 l per head/day)		3.5	x 10^9 m^3
Industrial effluents added to the sea by coastal industries per year		0.35	x 10^9 m^3
Sewage and effluents added by the rivers to the sea per year		50	x 10^6 m^3
Solid waste and garbage generated by coastal population per year (20% of this will go into the sea)		50	x 10^6 tonnes
Fertilizer used per year	(25% of these will end up in the sea)	5	x 10^6 tonnes
Pesticides used per year.		77,000	tonnes
Synthetic detergents used per year		125,000	tonnes
Oil transported in 1979 across the Arabian Sea		1009	x 10^6 tonnes
Oil transported to Western Hemisphere		654	x 10^6 tonnes
Oil transported to Far East and Japan		355	x 10^6 tonnes
Tar deposition on beaches from Kutch to Kerala			
1975		1,000	tonnes
1976		750	tonnes
Floating petroleum residue			
on Arabian Sea		3,700	tonnes
on Bay of Bengal		1,100	tonnes

CSO: 5000/7057

NORTHEAST DENUDATION, TOPSOIL PROBLEMS DISCUSSED

Madras THE HINDU in English 8 Jul 81 p 8

[Text] WITH the world's largest area under what is commonly known as 'Jhim cultivation'. North East India has for centuries been subjected to the dual scourge of denudation of forest resources and impoverishment of surface soil on account of wasteful and outmoded agricultural practices.

Described by the Governor, Mr. L. P. Singh, who is also the Chairman of the North Eastern Council, as the biggest curse of the region, 'jhumming' or shifting cultivation is a major problem of agriculture in the N.E. region, particularly in the hills, where out of an estimated 2.7 million hectares of land under this method only a small percentage is believed to have been reclaimed for permanent cultivation so far.

"By 2000 AD if any one can put it down, it will be a great achievement indeed", said the NEC chairman at one of his recent press conferences. In one of his air journeys from Imphal to Gauhati he had found that the atmosphere all the way was smoky and the hills were dotted with blazing forest.

As Chairman of the NEC, Mr. Singh had once suggested to the Union Government that top priority should be given to this problem of shifting cultivation and to this end he had proposed that World Bank assistance might be sought in view of the large capital outlay involved.

A study made by the NEC Secretariat struck a note of warning that "with the prevailing trend and steady rise in population of the region, the problem of shifting cultivation is gaining alarming proportions, threatening the ecological balance and economic prospects, as a result of rapid deterioration in soil productivity.

According to the NEC study, resettlement of all Jhumia and tribal families dependent on the shifting method of farming would require the development or reclamation of about 1.3 million hectares of land by 1989 and an investment of about Rs. 650 crores over a period of 10 years.

According to an official source, the present number of Jhumia families is 4.79 lakhs, and it is likely to rise to 6.5 lakhs in 1989, if the present 'alarming' trend continues.

Primitive, wasteful and uneconomic as it is in its practice, the Jhum cultivation has been known to be the bane of the economy of the entire North-Eastern Hills. But still it has not been easy to wean the highlanders from their traditional method of farming.

A significant step in the direction was, however, taken when 5,296 poor agriculturist families were settled in 1,13,000 hectares of land developed under the Soil Conservation and Control of Shifting Cultivation Programme launched under the auspices of the North Eastern Council during the Fifth Plan period.

The programme, which involved a total expenditure of Rs. 4.97 crores, was implemented in eight pilot projects taken up in the five States and two Union Territories of the region, Mizoram alone having two such pilot projects.

In addition, survey was arranged for soil and land use in the region with a view to facilitating efficient land use, according to an NEC source.

The practice of Jhumming is traditional with the tribals and it is so widespread that it is not possible, or desirable to do away with this age-old system completely. This is the view of administrative experts of the region. According to them, the solution is not easy because of the vastness and intensity of the problem, and the total abolition of the system is not considered desirable by some because of the psychological consideration bound up with the social fabric.

Opinion is in favour of gradual transition from tradition to modernity with understanding so that the tribals enthusiastically adapt themselves to the change. In fact a slow change is discernible. A co-existence of the traditional and the modern methods may have the desired objective ultimately.

There was a time, not long ago, when the only method of cultivation known in the North-Eastern hills was Jhum or shifting cultivation of the slash and burn method. Neither plough nor draught animals were known. The picture has changed, although not so appreciably as was initially expected with the introduction of modern methods.

The evil effects of Jhumming are rather glaring. In Meghalaya, for instance, half the forest areas of Garo Hills and three-fourths of the Khasi-Jaintia Hills have been denuded. Of course, it is not merely Jhumming that has brought about this sad situation in that State but also the unchecked indiscriminate felling of trees to meet the demand for timber.

In Meghalaya, most of the areas within the State fall in the heaviest rainfall belt of the world, where the annual average precipitation is between 1300 cm. and 1500 cm. Rainfall as high as 12.7 cm. per hour and 3.2 cm. per five minutes is also on record in places within the State. The heavy rainfall and its intensity causes splash erosion on the slopes made bare of the vegetation cover by Jhumming.

On account of repeated Jhumming, in short duration, the cumulative loss of top-soil has become so high that many of the slopes are practically devoid of any top-soil. Many hitherto productive hill areas in the region have become bare areas with rocks.

It is felt that if Jhumming is not effectively checked, it could render most of the hill areas' land barren and useless in course of time.

However, besides the Soil Conservation and Control of Shifting Cultivation Programme, now under implementation, the NEC has undertaken a few other schemes in order to introduce an element of dynamism in the stagnant rural scene in the region.

During the last few years a major attempt has been made to acquaint agriculturists with some new practices and to make available to them improved varieties of field, tuber, root and spice crops and also introduce improved varieties of major temperate, tropical and sub-tropical fruit crops.

CSO: 5000/7058

ENVIRONMENTALISTS CHALLENGE ALUMINUM SMELTER IN COURT

Crown Documents Demanded

Wellington THE EVENING POST in English 25 Jun 81 p 25

[Excerpt]

The Government must hand over documents put before cabinet since it decided, on April 27 last, to approve the second aluminium smelter at Aramoana.

In what is believed to be an unprecedented move by a New Zealand court the Court of Appeal has unanimously made an order for discovery against the Crown in respect of these documents.

The court comprised the acting president, Sir Robin Cooke, Mr Justice Richardson and Mr Justice McMullin.

Groups

The order, sought by two environmental groups, the Environmental Defence society and the Royal Forest and Bird Protection Society of New Zealand, was opposed by the Acting Prime Minister, Mr MacIntyre.

The applicants are challenging the legality of the cabinet decision to approve the smelter, using the fast track procedures of the National Development Act.

The substantive hearing of the action is set down for next week.

Opponents Denied Access

Wellington THE EVENING POST in English 26 Jun 81 p 6

[Excerpts]

Cabinet papers relating to the decision to approve the Aramoana aluminium smelter will not now be available in court to opponents of the project.

A decision to this effect was made in a judgment delivered in the Court of Appeal today.

On Wednesday the court made an order for discovery requiring the Crown to hand over for perusal by members of the court documents before cabinet and the Executive Council last April when the decision for approval was made.

The order made for production of the documents for inspection was duly complied with yesterday, the judgment, delivered by the acting-president said.

"We have now inspected the documents. In doing so we have had special regard to the substantial doubt which was created by the terms of the ministerial objection to production and which is referred to in our previous judgments," the judgment said.

Unanimous

"Having inspected them the court is satisfied unanimously, and notwithstanding the terms of the ministerial objection, that the interests of justice do not require any disclosure of the contents of the documents to the applicants.

"The applicants will suffer no injustice by non-disclosure.

"Accordingly no order will be made for production to the applicants and the documents will be returned to the Crown when this judgment is delivered.

"This decision is without prejudice to the right of the Crown to apply for leave to have the documents admitted in evidence at the hearing."

First Appeal Court Case

Wellington THE EVENING POST in English 30 Jun 81 p 6

[Excerpt] The validity of the Government's decision to approve an aluminium smelter at Aramoana, near Dunedin, was challenged in the Court of Appeal today.

A declaration is being sought by environmental groups that the decision is ultra vires the National Planning Act.

Other remedies being sought are a writ of certiorari to set aside or quash the Government's decision and a writ of prohibition against the Planning Tribunal to prevent it carrying out an inquiry under the fast track provisions of the act.

The court comprises Mr Justice Cooke, Mr Justice Richardson and Mr Justice McMullin.

Two separate actions are being heard together.

In the first the Coalition for Rational Economic and Environmental Development in New Zealand and Mr Gary John Holden, an environmentalist, are represented by Mr C S Withnall, with him Mr M W Newell. The respondents are the Governor-General and the Planning Tribunal, represented by the Solicitor-General. Mr D P Neazor, QC, with him Mr K Robinson, South Pacific Aluminium Ltd (Mr E W Thomas, QC, with him Mr R H Hansen and Mr J F Timmins). The Otago Harbour Board is represented by Mr A D Paterson and the Commission for the Environment by Mr R J Somerville, with him Mrs S Kernadine.

In the second action the applicants are the Environmental Defence Society and the Royal Forest and Bird Protection Society of New Zealand, represented by Mr G P Barton, with him Mrs M Frater and Mr J F Timmins.

Second Appeal Court Case

Wellington THE EVENING POST in English 6 Jul 81 p 4

[Excerpt]

AN application for a judicial review of the Government's decision to approve an aluminium smelter at Aramoana was heard in the Court of Appeal today.

Last week the court heard a similar application by Creednz (Coalition for national Environmental and Economic Development in New Zealand) and Mr Gary John Holden, a property owner at Aramoana. Decision was reserved.

Today's application is by the Environmental Defence Society and the Royal Forest and Bird Protection Society of New Zealand.

The court comprises Mr Justice Cooke, Mr Justice Richardson and Mr Justice McMullin.

Court Reserves Decision

Wellington THE EVENING POST in English 8 Jul 81 p 9

[Text]

Decision was reserved by the Court of Appeal yesterday after a hearing relating to the proposed Aramoana aluminium smelter.

The Enviromental Defence Society and the Royal Forest and Bird Protection Society of New Zealand are seeking a judicial review of the Government's decision to use the fast track provisions of the Natural Development Act to approve the establishment of the smelter by South Pacific Aluminium Limited.

Respondents in the action are the Governor-General, the Minister of National Development, South Pacific Aluminium Limited, the Otago Harbour Board and the Commission for the Environment.

Replying on behalf of the Crown the Solicitor-General, Mr D P Neazor, QC, said that now that the cabinet paper in which the smelter project was considered had been produced in court, it was manifest that the allegations by the applicants were untenable.

The paper described the proposed work, set out the consents sought, drew attention to the criteria in the National Development Act, summarised the arguments put forward by South Pacific Aluminium Limited and the Otago Harbour Board and placed the minister's comments before his colleagues.

The examination of the criteria was not uncritical and the minister had recommended against acceptance of one of them having been made out.

The paper did not attempt a definition of the term "essential" and there was no reason why it should.

Where the national interest lay was a matter neither of law nor of fact. It was pre-eminently a matter of opinion within the province of those with constitutional authority for determining what laws will be proposed to Parliament. What was "likely" in relation to the national interest fell within the same category.

Mr Neazor said it was not to be taken that the national interest aspect of the matter was not fully considered because it was not referred to extensively in the paper. That was the very ingredient in the decision which one would expect would be added in the course of consideration of the matter by ministers.

Mr Neazor submitted that ministers had the application properly put before them, that their attention was drawn only to relevant considerations and the proper criteria by which they were to be judged and there was no demonstrable error of law in their decision, which was within the four corners of their statutory power.

Cabinet Document Released

Wellington THE EVENING POST in English 7 Jul 81 p 10

[Text]

NO precedent had been established by the decision to turn a cabinet document over to environmentalists, the Minister of Justice, Mr McLay, said.

Mr McLay was questioned about the move — approved by the cabinet yesterday — which came after an adjournment in the Court of Appeal, where environmentalists are contesting an Executive Council order approving fast track planning for the Aramoana aluminium smelter.

The court had said it believed it might be in the interests of the public and justice if the cabinet submission on which it based its recommendation to the Governor-General was made available, Mr McLay said.

The week before last the court had upheld the Crown claim for privilege, he added.

That decision had been one of considerable constitutional importance, Mr McLay said.

The move to hand over the document was "done by the Crown on its decision, and not on the basis of the court ordering it."

"No precedent has been established by that decision itself."

Mr McLay said he was not under the impression that the court would have made an order.

Environmental Impact Report

Wellington THE EVENING POST in English 4 Jul 81 p 4

[Report by Energy Reporter Michael Field]

[Excerpts] THE PLANNED second aluminium smelter, estimated to cost $850 million, will have little impact on the environment, a major report released today says.

A 284-page environmental impact report on the proposed smelter was released by the Commission for the Environment. It was prepared for the consortium building the smelter, South Pacific Aluminium Ltd and the Otago Harbour Board.

The report, detailing the impact of the smelter at Aramoana near Dunedin, is by far the largest such report yet presented on the major energy development proposals. It was written by the Auckland town planning specialists Murray-North Partners Ltd, the same firm which prepared a similar report on the stand-alone methanol plant in Taranaki.

With the release of the report today, the public timetable for procedures under the fast-track provisions of the National Development Act is set in train.

Interested people have six weeks from now in which to prepare counter submissions for the commission which is then required to produce a detailed audit of the report by October 9.

It will then go before a planning tribunal which is required to hold public hearings not less than six weeks and not more than nine weeks after the release of the audit.

The use of the fast track has this week been the subject of a Court of Appeal hearing.

The smelter report concedes that the smelter will mean Aramoana and Te Ngaru residents at the entrance to Otago Harbour will lose "virtually all the elements of the area which are valuable to them."

Earlier, in the summary, the report said the smelter will result in only small changes to the environmental quality of the area, and will pose "little threat" to existing flora and fauna.

The report also says the smelter will "not have adverse implications" for the royal albatross colony at Taiaroa Head. Proposed harbour works and reclamation will not affect the harbour, and the noise generation from the project will "result in only a slight increase in existing noise levels."

"In promoting the project (the company) is mindful of its obligations to ensure that the development does not result in significant deterioration of the environment.

"It is also aware of the need to ensure the health of its employees is safeguarded. It intends to be both a good neighbour and a good employer."

The consortium selected Aramoana from four possible South Island sites on the basis of its deep-water access, good wind dispersion, adequate size, as "a site of little agricultural value" and the ability of Dunedin to service the project's requirements.

Go-Ahead for Smelter Seen

Wellington THE EVENING POST in English 1 Jul 81 p 12

[Report by Energy Reporter Michael Field]

[Text]

The controversial planned second aluminium smelter is about to be launched on its fast track planning procedures despite the opening in Wellington yesterday of a Court of Appeal hearing disputing that action.

The Commission for the Environment has distributed 450 copies of an environmental impact report published by the consortium which will build and operate the smelter at Aramoana near Dunedin, South Pacific Aluminium Ltd.

Publication by the media of its contents has been embargoed until Saturday.

Earlier this year an order-in-council was granted by the Government placing the proposal on the so-called fast track of the National Development Act.

However the Environmental Defence Society and the Royal Forest and Bird Protection Society have sought a judicial review of that decision.

That review opened yesterday in the Court of Appeal.

Valid

Although the matter is in court, the commission and South Pacific have continued to carry on the work as if the order-in-council was valid.

With the publication of the impact report on Saturday, and the publication by the commission of public notices calling for public submissions on the report, a tight legal timetable swings into effect.

Under the National Development Act people have six weeks to absorb the 284-page report and give submissions to the commission. The commission will then have until October 9 to publish an audit of the impact report.

As soon as practicable after receiving a certificate of the completion of the audit, the registrar of the Planning Tribunal will give notice of a public hearing to be held at a date "not less than six weeks nor more than eight weeks after the date of the public notice," assuming the fastest possible publication of a public notice, the earliest date for a hearing would be November 23.

Approval

A smelter consortium source told the "Post" yesterday they hope to receive planning approvals by the end of this year.

However they may run into another problem with the act: it abolishes the period between December 20 and January 20. "No account shall be taken of the period," a section of the act says.

However the source said the company was working to eliminate problems created by any potential planning delays. He said they were doing all the work they could possibly do now, and were hopeful of being able to start construction within days of receiving approval.

This would, however, be dependent on any conditions placed on the approval. At that point the consortium would be faced with a "go no-go" decision.

The head of the commission team carrying out the audit, Mr Paddy Gesham, told the "Post" yesterday that meeting the timetable "will not be easier".

A delay by the company in completing the report — it had been promised in March — had created some staffing problems. Mr Gesham said a three-person team would work full-time on the audit, while a bigger team of experts in various fields would offer contributions to the work.

They had already gathered in extensive amounts of data on aluminium smelting worldwide, Mr Gesham said.

Mayor Raps Environmentalism

Wellington THE EVENING POST in English 9 Jul 81 p 17

[Text]

DUNEDIN, July 7 (PA). — It is hard to escape the conclusion that environmentalism is anti-everything, especially anti-business, the Mayor of Dunedin, Mr C G Skeggs, said today in Queenstown.

Addressing the New Zealand Groundspread Fertilisers' Association, he said one of the most curious things about environmentalism was that it was considered to be a very liberal cause, when in fact it was a highly conservative philosophy.

"Placing value more on spiritual values over material progress and to look down on industry and commercial activity as something vulgar and distasteful really constitutes time-worn aristocratic attitudes," he claimed.

The new aluminium smelter had been offered to Dunedin and would give a lift that had been badly needed throughout the entire city, but the environmentalists and those who had other political reasons for opposing it, constituted a very real threat to the city by their opposition, Mr Skeggs said.

"There has to be compromise. Those who make the most noise about the smelter are a most entirely middle class articulate people based around the university and almost all are in work.

"Moreover, a large percentage are not dependent on private enterprise for their monthly pay-cheque but get it from the taxpayer," the mayor said.

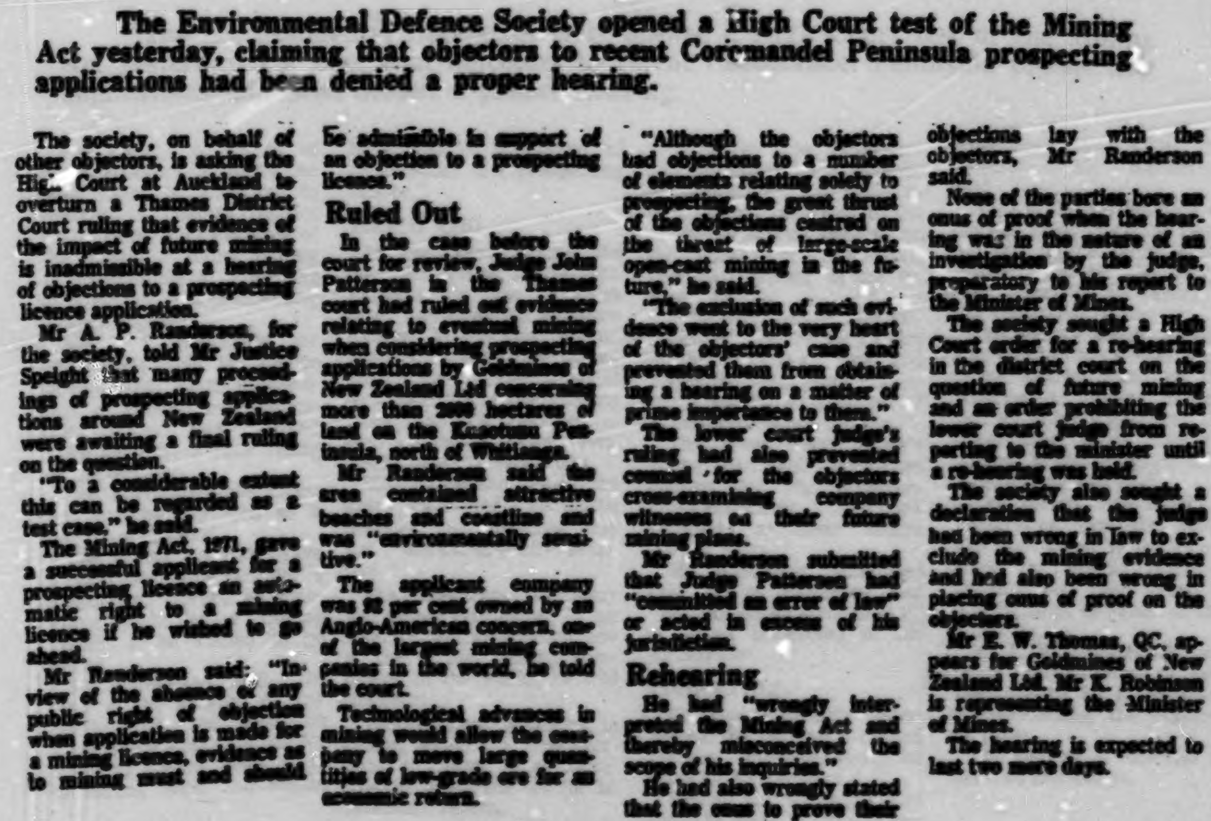
CSO: 5000/9038

ENVIRONMENTALISTS OPEN HIGH COURT TEST OF MINING ACT

Coromandel Peninsula Affected

Auckland THE NEW ZEALAND HERALD in English 23 Jun 81 p 4

[Text]



The Environmental Defence Society opened a High Court test of the Mining Act yesterday, claiming that objectors to recent Coromandel Peninsula prospecting applications had been denied a proper hearing.

The society, on behalf of other objectors, is asking the High Court at Auckland to overturn a Thames District Court ruling that evidence of the impact of future mining is inadmissible at a hearing of objections to a prospecting licence application.

Mr A. P. Randerson, for the society, told Mr Justice Speight that many proceedings of prospecting applications around New Zealand were awaiting a final ruling on the question.

"To a considerable extent this can be regarded as a test case," he said.

The Mining Act, 1971, gave a successful applicant for a prospecting licence an automatic right to a mining licence if he wished to go ahead.

Mr Randerson said: "In view of the absence of any public right of objection when application is made for a mining licence, evidence as to mining must and should be admissible in support of an objection to a prospecting licence."

Ruled Out

In the case before the court for review, Judge John Patterson in the Thames court had ruled out evidence relating to eventual mining when considering prospecting applications by Goldmines of New Zealand Ltd concerning more than 2000 hectares of land on the Kuaotunu Peninsula, north of Whitianga.

Mr Randerson said the area contained attractive beaches and coastline and was "environmentally sensitive."

The applicant company was 82 per cent owned by an Anglo-American concern, one of the largest mining companies in the world, he told the court.

Technological advances in mining would allow the company to move large quantities of low-grade ore for an economic return.

"Although the objectors had objections to a number of elements relating solely to prospecting, the great thrust of the objections centred on the threat of large-scale open-cast mining in the future," he said.

"The exclusion of such evidence went to the very heart of the objectors' case and prevented them from obtaining a hearing on a matter of prime importance to them."

The lower court judge's ruling had also prevented counsel for the objectors cross-examining company witnesses on their future mining plans.

Mr Randerson submitted that Judge Patterson had "committed an error of law" or acted in excess of his jurisdiction.

Rehearing

He had "wrongly interpreted the Mining Act and thereby misconceived the scope of his inquiries."

He had also wrongly stated that the onus to prove their objections lay with the objectors, Mr Randerson said.

None of the parties bore an onus of proof when the hearing was in the nature of an investigation by the judge, preparatory to his report to the Minister of Mines.

The society sought a High Court order for a re-hearing in the district court on the question of future mining and an order prohibiting the lower court judge from reporting to the minister until a re-hearing was held.

The society also sought a declaration that the judge had been wrong in law to exclude the mining evidence and had also been wrong in placing onus of proof on the objectors.

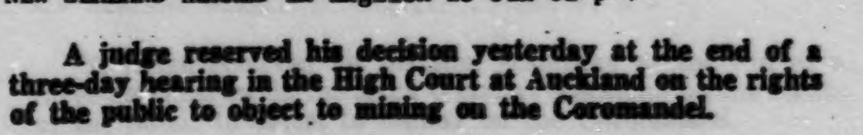
Mr E. W. Thomas, QC, appears for Goldmines of New Zealand Ltd. Mr K. Robinson is representing the Minister of Mines.

The hearing is expected to last two more days.

Judge Reserves Decision

Auckland THE NEW ZEALAND HERALD in English 25 Jun 81 p 4

[Text]



A judge reserved his decision yesterday at the end of a three-day hearing in the High Court at Auckland on the rights of the public to object to mining on the Coromandel.

Mr Justice Speight has been asked to rule on whether objectors can call evidence on the environmental impact of mining when public objections are heard against a prospecting application.

The counsel for all parties at the hearing have agreed that the Mining Act 1971 gives the public no rights to object when a company with a prospecting licence exercises its right for a licence to mine.

The case has been brought by the Environmental Defence Society against Goldmines of New Zealand Ltd which has applied for three prospecting licences covering more than 2000 hectares of the Kuaotunu peninsula near Whitianga.

Overturn

The society has asked the judge to overturn a ruling by District Court Judge John Patterson that evidence related to mining was inadmissible at the February hearing in Thames of objections to Goldmines' application for a prospecting licence.

Judge Patterson and the Minister of Energy, Mr Birch, are joint respondents with the company in the society's motion for review.

Mr A. P. Randerson, for the society, told Mr Justice Speight yesterday that having to face public objections was a small price to pay for the mining rights given to holders of a prospecting licence under section 57 of the act.

Forest

The possibility of large-scale damage from mining could never be raised if it was disallowed at the prospecting licence inquiry, he said.

An area in question might be covered in mature kauri forest which would be unharmed by prospecting bores but would be destroyed by any sort of mining.

Mr Randerson said that according to the company's view of the procedures, even the minister would be unable to prevent mining on those grounds if a prospecting licence had already been given.

If evidence of the probable impact of mining was admitted at the initial inquiry, it would give the applicant company early warning of environmental difficulties before it went to the expense of prospecting investigations.

For the company, Mr E. W. Thomas, QC, said admission of evidence of possible future mining damage would place an unfair burden on a company seeking a prospecting licence.

Years

The company could not know the scale and type of mining, if any, that could be embarked upon until after years of investigations under the prospecting licence.

"It would be easy for the objectors to raise all sorts of fears but it would not be easy for the company to give an adequate answer," Mr Thomas said.

[illegible] evidence would be speculative, he said.

It would be just as valid for the company to introduce evidence of the dire straits of the country's economy, the employment benefits and spin-off industry generated by possible future mining.

CSO: 5000/9039

GOVERNMENT MAY LIMIT ROLE OF ENVIRONMENT COMMISSION

Cabinet Decision Seen

Auckland THE NEW ZEALAND HERALD in English 1 Jul 81 p 1

[Excerpt]

The Government may be close to making a decision on the future role of the Commission for the Environment.

A cabinet discussion on the commission is expected to be held next Monday after being deferred from this week's cabinet meeting.

With the fate of the commission in the balance, the Minister for the Environment, Dr Shearer, is expected to ask his cabinet colleagues to allow time for further studies.

The commission has been under threat since last year, when it produced a critical environmental audit on the CSR-Baigent Nelson pulp mill proposal which went too far for some cabinet ministers' liking.

Following the Baigent audit, the Government set in motion investigations into limiting the commission to examining only the "environmental" aspects of major development projects.

Prepared

The various studies now seem to be reaching their climax.

Dr Shearer is said to have prepared a paper which is expected to be discussed by the cabinet next Monday.

In the paper, he is said to be recommending further study before the cabinet makes a decision on whether to make significant changes to the commission.

He is taking the view that economic matters are inevitably intertwined with environmental issues as far as the commission's studies go.

And he is said to be arguing that any restriction on the commission could conflict with the National Development Act provisions which call for the commission to prepare independent environmental audits on projects which fall under that act.

Inquiries

Dr Shearer was not prepared to comment yesterday when asked how long the cabinet-level discussions would take.

"I see no requirement to talk about it," he said. "Just be patient."

Background Information

Auckland THE NEW ZEALAND HERALD in English 1 Jul 81 p 16

[Article by David McLoughlin]

[Text]

The cloudy future of the Commission for the Environment stems directly from the confident, more assertive role the organisation has assumed in recent times.

Under the commissioner, Mr K. D. Piddington, who took up the post early last year after a career in foreign affairs and the Planning Council, the commission's outlook has noticeably broadened.

It branched out from looking at the purely "environmental" aspects of the projects it had to review and began commenting on the economic and social issues of major developments.

And that was too much for some senior cabinet ministers, such as the Prime Minister, Mr Muldoon, and the Minister of Energy, Mr Birch, who were starting to promote the benefits of the Government's "think big" development strategy.

Dissatisfaction with the commission's new role came to a head last year when it published a searching, critical environmental audit on the CSR-Baigent pulp mill planned for Nelson.

The prospect of an independent watchdog commenting adversely on key Government policy planks did not wear well with some in the cabinet, and it was not long after the CSR-Baigent uproar that moves were in hand to bring the commission back on a leash.

No Notice

In some ways the spectacle seems extraordinary, because the commission legally is an animal without teeth.

Bereft of its own legislative backing, the commission can comment and make recommendations but developers need take no notice — though most do.

And because no legislative direction exists to define an environmental impact report and an environmental audit, the question of just what constitutes those very important procedures shows signs of becoming murky.

The only mention of the commission in an act of Parliament is in the National Development Act, which states the commissioner must prepare an audit of projects which come under that legislation.

Feel Way

The Commission for the Environment was formed in 1972 in the wake of the movement to stop the raising of Lake Manapouri to provide power for the Tiwai Pt aluminium smelter.

From the beginning it had no statutory backing to help it feel its way: The commission was set up by a cabinet minute and all that is needed to abolish or change it is another cabinet minute.

The first Minister for the Environment, the present Deputy Prime Minister, Mr MacIntyre, introduced the now-familiar system of environmental impact reports and audits which has continued in ever-growing form through to today.

Under the Labour Government of 1972-75, the fledgling commission expanded slightly, and in the past three years has really blossomed, taking a higher profile and becoming snared in occasional controversy.

Outcomes

Today, with environmental matters crucial as the country strives to balance the need for rapid industrial development against protection of natural resources, the commission's future is an important issue.

The present cabinet investigations could lead to any of several outcomes.

The commission could be abolished or merged with some other body, such as the town and country planning division of the Ministry of Works and Development, an organisation which is no friend of the commission.

It could be left in its present form, but with its cabinet minute substantially altered to stop it examining the economic implications of major projects.

New Ministry

Parliament could pass legislation to define the role of the commission and give statutory outlines of its functions and machinery.

Or it could even be replaced by a new ministry for the environment, as recommended by the Organisation for Economic Co-operation and Development in a report to the Government earlier this year.

Whatever happens, it is obvious the commission needs strengthening if it is to carry out its purpose adequately.

Because of its small size, fears have been raised that it will not be able to cope with all the big projects being put in motion.

For example, a hold-up with South Pacific Aluminium's environmental impact report for the second aluminium smelter brought concern that the commission may soon have too many projects going at once to cope.

Months Late

The smelter report, months late, has been given to the commission to audit just as commission staff are preparing to attend planning tribunal hearings on the Mobil synthetic petrol plant.

Mr Minogue says the environmental procedures for big projects have to be timed so they fall one after another, not all at once.

The commission also needs legislative backing, he argues, to save it from ministerial interference.

Reluctant

Mr Minogue added: "It is my belief that the commission has been subject to ongoing political direction and the prospect is that it will continue to be subject to political direction."

Dr Shearer was reluctant to talk when asked to comment on the future of the commission.

"I'm confident the commission will continue to operate," he said.

Dr Shearer said his view would be "very much formed" after he saw the result of public submissions on the OECD report.

Those submissions were considered last week by the Environmental Council and the council's report could be made public shortly.

If, as seems likely, the Government decides to put the Luggate and Queensberry dams from the Clutha hydro scheme under the National Development Act, the commission will have difficulty managing all three projects at once.

To ease the manpower shortage, the new Minister for the Environment, Dr Shearer, has won approval to lift the commission's staff ceiling to 35, enabling three more investigating officers to be hired, giving the commission a total of 18 technical people.

Impractical

But one arch-critic of moves to restrict the commission, the Government MP for Hamilton West, Mr Michael Minogue, says a lot more is needed than just extra staff.

"It is self evident that if these major projects come one on top of the other it is going to be impractical for the commissioner to discharge his functions adequately," Mr Minogue said.

CSO: 5000/9037

ENVIRONMENT SAID THREATENED BY NARROWMINDED DEVELOPMENT

Conservation Group Report

Wellington THE EVENING POST in English 13 Jul 81 p 4

[Text]

Narrow-minded development of New Zealand has ruined or threatens much land, costs us $100 million annually in lost farm production and puts at risk the very ability of the land to support us in the future, says a report released today.

The report, "Integrating Conservation and Development — A Proposal for a New Zealand Conservation Strategy," concludes that, to secure the future and ensure development can be sustained, the environmental effects of projects should be carefully considered in the early stages of planning.

The 61-page discussion booklet was prepared by a committee of the Nature Conservation Council that included representatives of five government agencies and two conservation groups, and was formally launched at a function at Parliament today.

The report says: "Careful development of resources can lead to economic growth, improved living standards, employment opportunities and increased wellbeing in the broadest sense. Depletion, destruction and over-exploitation undermine the very means by which New Zealand can survive and flourish.

"Sustainable development will be achieved when conservation is fully integrated with development and the two are no longer viewed as mutually exclusive or opposite ends of a spectrum."

A danger

It says natural areas such as wetlands, coastal zones and forests had been subjected to widespread development and the changes represented not only a danger to the animal inhabitants, but also to humans.

It explained that these "life support systems" and the processes they contained sustained all plant and animal life.

"Food, and fibre production, shelter, health and wellbeing and every aspect of human survival and sustainable development depend on them.

While changes to the land had allowed widespread exploitation for farming, three-quarters of that land was now eroding. Construction of buildings and roads on good farm land was costing $100 million annually in lost potential agricultural production.

The fishing industry had also been affected with uncontrolled exploitation endangering some species and also the future viability of parts of the industry. More than 10 percent of the 300 estuarine systems which supported fish were moderately or grossly polluted.

Too slow

At the launching of the report today the Minister for the Environment, Dr Ian Shearer, said there was not a fast enough input of environmental considerations into various stages of planning in New Zealand.

He believed that many of the proposals contained in the Nature Conservation Council's conservation strategy should have been implemented "two yesterdays ago."

The strategy served notice that New Zealand had reached a "crunch point" — that sustained development could only be achieved by marrying conservation interests with those of economic growth.

Development Strategy Goals

Christchurch THE PRESS in English 13 Jul 81 p 16

[Report by Oliver Riddell]

[Text]

Careful development of New Zealand's natural resources can lead to economic growth, improved living standards, employment opportunities, and increased well-being for all. Depletion, destruction and over-exploitation of those resources can undermine the means by which New Zealanders can survive and flourish. Sustainable development will be achieved only when conservation is fully integrated into development and the two are no longer opposed.

These suppositions are argued in the New Zealand Conservation Strategy, published by the Nature Conservation Council today. The study was prepared following the publication of the World Conservation Strategy in March, 1980. It will be presented to the General Assembly of the I.U.C.N. (International Union for the Conservation of Nature and Natural Resources) when it meets in Christchurch in October.

Called "Integrating Conservation and Development," the strategy is a 64-page booklet. It is intended to be read by developers and to this end has taken more account of the interests of developers than many conservationists will like.

The booklet is to be given a wide circulation before the I.U.C.N. meeting, and comments on it will be sought. There is a very real chance that it will be ignored by developers, including the Government, once the fanfare of its launching is over.

The booklet deserves a better fate. The strategy attempts to explain the integration of conservation and development, and examines ways in which this may be promoted by those concerned about the country's future.

In particular, it seeks to influence Government policymakers and their advisers; managers of natural resources, farmers, foresters and fisher-species at risk of extinction.

[as published]

men; people actively interested in conservation issues; those engaged in planning and programming development, including Government agencies, industry and commerce, and trade unions.

The strategy has five main objects:

1. To protect ecological processes and life support systems (such as freshwater and coastal systems, soil, forest, scrub, and grassland) on which human survival and development depend.

2. To provide for cultural, spiritual and other non-material needs of society by the protection of natural resources and the development of diversity in their use.

3. To preserve genetic diversity (the range of genetic material found in organisms) on which depends the functioning of many life-support systems with commercial, medical and scientific uses.

4. To ensure the sustainable use of the renewable resources (especially fish, forests, pasture and arable lands) on which the New Zealand economy is largely based.

5. To ensure that non-renewable resources are depleted at a rate that enables transition to the use of more abundant materials or of sustainable resources.

The booklet argues that all these aims are a matter of urgency because the resource base of some important industries is shrinking, as well as sometimes being poorly managed. More than three-quarters of New Zealand soils show signs of erosion. More than 30 of the 300 estuary systems which support fisheries are moderately or grossly polluted.

Some living resources are being over-exploited. Rock lobsters, Tasman Bay scallops, Bay of Plenty trevally, Canterbury Bight elephant fish, and Hauraki Gulf snapper are all endangered. There are 531 threatened and endangered

[as published]

Less than 10 per cent of the original freshwater wetlands in New Zealand are still unmodified.

The booklet argues that opportunities for spiritual and cultural development are being lost. Accessible open spaces and wild areas near cities and towns are scarce; only remnants of the once widespread lowland native forests remain; natural and wild areas are being lost to hydro and geothermal development.

Failure to conserve resources incurs a high cost, according to this study. Costs of imported oil continue to rise and a continued supply of imported minerals cannot be guaranteed at an acceptable price.

The main obstacles to achieving conservation are said to be: The belief that resource conservation is limited, rather than a process that cuts across all sectors; the consequent failure to integrate conservation with development; the lack of a capacity to conserve; the failure to recognise the need to plan now for a sustainable yield.

What is called "the lack of a capacity to conserve" is described in the booklet as a result of inadequacies in some legislation and the lack of enforcement, poor organisation (notably a lack of co-ordination between Government agencies), and a basic lack of information on priorities, on the productive and regenerative capacities of living resources, and on the trade-offs between one management option and anotherr. The study determines the priority requirements for achieving each objective, and then proposes major legislative changes to assist this.

The booklet is not a document of doom and gloom. Nor does it give any grounds for complacency. It is intended as a document for study, and carries no Government promises as to its impact or acceptance as a basis for Government action.

CSO: 5000/9037

TOTAL HALT TO LOGGING OF NATIVE FORESTS DEMANDED

Auckland THE NEW ZEALAND HERALD in English 22 Jun 81 p 4

[Text]

Two-thirds of native forests would be kept as reserves untouched by logging, the Minister of Forests, Mr Venn Young, told a seminar at Auckland University.

The remainder would be logged at a level low enough to sustain the forests.

Mr Young's outline of Government policy on native forests was greeted with cries of "rubbish" from some of the audience of 130 at the seminar, which was organised by the Royal Forest and Bird Protection Society and the Native Forests Action Council.

Hecklers during Mr Young's closing address on Saturday called for a halt to all logging of native forests.

But Mr Young refused to support a complete halt to logging, saying that such a policy would create unemployment.

Suspended

"We must take the socio-economic effects into account," he said. "There are communities in the central North Island and on the West Coast that rely on the continuation of native forestry for their survival.

"Some areas have paid more than their share towards these policies of forest conservation. We must take account of people's entitlement to stay in jobs they have had all their working lives."

Mr Young assured the audience that logging had and would be suspended in areas where wildlife species were threatened.

After a cry of "Venn Young is the predator," the minister added that the axe or the chainsaw were not as damaging to rare birds as were the stoat or the weasel.

After the seminar, the research director of the Native Forests Action Council, Mr Guy Salmon, said his organisation was not asking for a complete halt to logging, but for a balance of more conservation and less logging.

He suggested that people who lost their jobs because of reduced native logging could be employed on exotic forestry.

He said there were fewer jobs at stake than the minister had implied.

In the management proposals for the King Country forests, the highest logging proposal for Pureora would only be enough to employ four people for three months of the year, he said.

In south Westland there were 35 people employed on native forestry, 30 on milling and five on service jobs. Alternative work for them could be found in nearby processing mills.

Independent

A motion was passed at the seminar calling for a reorganisation of the Scientific Co-ordinating Committee, formed in 1974 to advise the Minister of Forests on scientific research and the formation of reserves in state forests.

The seminar supported recommendations by Mr Salmon that the committee be made independent of the Forest Service and responsible to the Minister for the Environment rather than to the Minister of Forests.

It agreed that the composition of the committee should be changed to include a majority of conservation experts.

Conservation recommendations and socio-economic considerations should be a public process under the Forests Act, using improved forest management plans.

Supported

There should also be an independent audit of public submissions on management plans by a body responsible to a minister other than the Minister of Forests.

Recommendations on forest reserves from a review of native forest policy published by the Environmental Council in 1979 were also supported

The only vote against the motion came from the Forest Service representative at the seminar, Mr K. Myers.

Mr Salmon told the seminar that united councils were out of touch with environmental issues.

He said the growth of conservation awareness in the past 10 years, which had caught the imagination of many young people, had not extended to members of united councils, who were mostly older farmers or retired businessmen.

There was a vast difference, he said, between the enlightened attitude to parks and reserves of bodies such as the Auckland Regional Authority and the attitudes of many united councils.

CSO: 5000/9039

LOWER EFFLUENT DISCHARGES FROM PULP, PAPER MILLS SEEN

Christchurch THE PRESS in English 25 Jun 81 p 21

[Text]

PA Wellington

Lower effluent discharges can be expected from an expansion of the pulp and paper industry according to a study made by the Commission for the Environment.

Overseas improvements in pulping technology pointed to considerable opportunities for reducing waste, says the study by a commission researcher, Mr Owen Cox.

The study, made in 1978 and 1979 and expected to be a key paper for the second part of the Forestry Conference in September, reviewed five North Island mills, plus the New Zealand Paper Mills plant at Mataura.

Mr Cox said improvements in technology ranged from more efficient chemical, energy and water useage, to development of effluent-free mills.

"These overseas developments suggest there are considerable opportunities for lowering effluent discharge in pulp mills, especially future mills," he said.

"New mills, and expansions to existing mills, can be expected to have lower per unit effluent discharges to the environment than existing mill operations."

The study said recent design advances for chemical pulp mills could reduce effluent and pollution to levels from mechanical mills.

Mid-1980s technologies rated effluents from chemical mills at least double the standards for mechanical mills.

Chemical pulping, or kraft technology is used at the N.Z. Forest Products mill at Kinleith, and for almost half of output from the Tasman Pulp and Paper mill at Kawerau.

Mr Cox said recent technical developments had also improved effluent from mechanical pulping.

"However, generation of electricity to meet the higher power demands of mechanical pulping increases the potential off-site environmental impact," he said.

The study said the Kinleith mill would continue to meet class D water standards for effluent, but warned that further expansion, if coupled with a proportional increase in effluent, would cause serious deterioration to the Waikato River.

The Kawerau mill did not meet all requirements for its discharge rights into class D waters of the Tarawera River, the study said. Colouring was the main problem.

Expansion of the Carter Oji Kakusaku Pan Pacific mill at Whirinaki had reduced water consumption and increased effluent screening.

"Further expansion, particularly into paper-making, may necessitate more external measures to treat effluent, and problems with the bark dump highlight the need for bark to be effectively used and careful selection of the waste dump site," the study said.

It had few criticisms of the N.Z. Forest Products mills at Whakatane and Mataura.

CSO: 5000/9039

ECOLOGIST, MANUFACTURER ARGUE LEADED GASOLINE ISSUE

Wellington THE EVENING POST in English 22 Jun 81 p 6

[Text] The Friends of the Earth group wants a government study into substitutes for leaded petrol, but an Australian involved in marketing lead additives believes the cost of such a move would not be justified by the danger posed.

These views come from Mr John Horrocks, a spokesman for the friends, and Mr Peter Foster, Australian manager of Associated Octel.

Associated Octel is a British company manufacturing lead additives, and Mr Horrocks is a leading campaigner against the addition of lead to petrol.

They were in Wellington at the weekend for a conference on lead in petrol.

Mr Horrocks said air pollution levels in Christchurch and a few other New Zealand centres were similar to those measured during a Sydney study, which concluded that high airborne lead levels were connected with child behavioural problems, hyperactivity, and learning difficulties.

He said the Sydney study, carried out by Professor Lloyd Smythe, the head of the analytical chemistry department of the University of New South Wales, showed alarming levels of lead in the blood of schoolchildren.

He suggested a cost-benefit analysis into the worth of fuels like compressed natural gas and lead-free petrol, which could also look at removing other pollutants.

Mr Foster agreed that high lead levels in the environment endangered health, but said the amount contributed by exhaust emissions was so minimal as to make it uneconomic to reduce the lead content of petrol, or replace petrol altogether.

Where high lead levels had been found to be affecting health, the source was usually found to be paint and water pipes, he said.

He agreed the environment would be cleaner without lead from petrol, but said it would be only marginally so.

There were other sources of lead which should be eliminated first, he said.

Taking the lead out of petrol would create big costs for the country with higher petrol consumption, modifications to the refinery and to vehicles — costs which he said could not be justified by the low risk to health leaded petrol posed.

CSO: 5000/9039

NEW APPROACH TO SOLVING POLLUTION OF BOHAI BAY

Tianjin TIANJIN RIBAO in Chinese 9 Jun 81 p 1

[Article: "Taking a New Look at Pollution in Bohai Bay"]

[Text] The Chinese Academy of Sciences and scientists in Tianjin have proposed new views on pollution in Bohai Bay. They believe that the major problem Bohai Bay now faces is the pollution of organic matter such as nitrogen and phosphorus. Because the great input of nutrients causes algae to multiply excessively, the amount of oxygen in the water is reduced and the conditions in which fish can live are deteriorating.

This new viewpoint was advanced at the recent work conference on environmental protection scientific research held in Tianjin. It differs from previous viewpoints. In the past it was believed that the pollution of Bohai Bay and the diminution of aquatic product resources were caused mainly by the dumping of petroleum and heavy metals, principally mercury. Therefore, the state has spent a great amount of money in the past several years to control these pollutants, and has obtained some results in protecting the environment of Bohai Bay. However, nitric and phosphoric organic pollutants did not receive widespread attention at that time. In August 1977, a "red tide" phenomenon occured in Bohai Bay; the water surface over a 560-square-kilometer area turned dark red, and many dead fish floated on the water. The seawater gradually returned to normal after 20 days. According to investigations, the redness of the seawater was caused by the heightened multiplication of microscopic algae due to the great increase of organic matter such as nitrogen and phosphorus in the seawater, plus favorable conditions of temperature and wind direction. Since then, people have begun to pay more attention to pollution by nitric and phosphoric organic matter.

In order to provide a scientific basis for the environmental protection of Bohai Bay and the entire city of Tianjin, the Science Committee and the Environmental Protection Bureau of Tianjin City have organized relevant departments in Tianjin and have collaborated with 18 institutes of the Chinese Academy of Sciences, under the leadership of the Environmental Protection Office of the State Council and with the enthusiastic assistance of the Chinese Academy of Sciences. Beginning in April 1978, they have carried out a complete investigation and evaluation of the natural environment of Bohai Bay and Tianjin City. This is a large-scale, broad-range, integrated environmental study with definitive objectives and complete scientific disciplines.

In the past 3 years, the scientists have made a general investigation and an integrated evaluation of the species, quantity, mode, and characteristics of the major pollutants entering Bohai Bay, the distribution and transformation characteristics of pollutants in seawater, substrate, and biological bodies, and the effects on marine biology, aquatic product resources, and human health. They have also studied the self-purification ability of Bohai Bay and have obtained a great amount of valuable data and information. The results of their investigation show that pollution by nitric and phosphoric organic matter in Bohai Bay is an outstanding problem at this time. Petroleum pollution in local areas poses a potential threat, and as the development of petroleum resources and shipping business progresses, the danger tends to increase. Pollution by heavy metals was not found to be a major problem. In the meantime, the scientists have also suggested that the self-purification ability of Bohai Bay should be fully utilized as an important aspect of the integrated prevention of pollution in the bay.

In addition, the scientists have made a complete investigation and analysis of the pollution conditions of air, soil, surface water and ground water in Tianjin city and the transfer and transformation of the major pollutants. They also have collected systematic data on urban noise, flow rates of vehicles and pedestrians, building and population density, green areas in the city, and the correlation between environmental and human health conditions. An encouraging step has been made toward a general evaluation of the city's natural and social environment.

9698
CSO: 5000/4082

UNEMPLOYED YOUTHS ORGANIZED TO FIGHT 'THREE WASTES'

[Beijing RENMIN RIBAO in Chinese 19 Jun 81 p 2

[Article by Research Institute of Qiqihar Municipal CCP Committee: "Retired Couple in Qiqihar Municipality Organize Unemployed Youths to Make Three-Waste Purification Plant With Self-Raised Funds"]

> [Text] Editor's note: A couple of retired workers, Song Chonghan [1345 1504 3352] and Ouyang Hiuying [2962 7122 1920 5391], have organized several unemployed youths to form a three-waste purification plant with self-raised funds. This practice should be encouraged. In this way, retired and unoccupied technicians can still play a useful role, not only creating material social wealth and reducing environmental pollution, but also providing jobs for unemployed youths. This means "killing several birds with one stone." The authorities concerned should support and promote such a practice, since it is beneficial to both the state and the people.

The Three-Waste Purification Plant in Tiefeng District of Qiqihar municipality, Heilongjiang Province, was formed with self-raised funds and staffed by several unemployed youths organized by retired worker Song Chonghan and his wife Ouyang Huiying, who had also retired for health reasons. The main task of the plant is to recover waste oil, waste liquid and waste residues, to be reused after purification, as a service to the state and the society. This plant has already gained heartening results since its inception.

Song Chonghan and his wife were originally graduates and postgraduate students of Zhejiang University in chemistry. After their retirement, they could not bear the sight of huge quantities of waste oil, waste liquid and waste residues being simply discarded and causing environmental pollution. At the same time, they knew that many youths were unemployed and that they could not be given jobs for some time. Therefore, they decided to build a plant for the recovery of the three wastes. This plant would provide an opportunity for them to make use of their own technical skill as a contribution to the state as well as to organize the unemployed youths to learn technology and to earn their living. In June and July 1980, this couple raised some 3,000 yuan through their own efforts to buy equipment and material, and organized five unemployed youths from their own family and the families of their relatives and friends to work in two small houses loaned by friends. This plant formally began operation in September after obtaining approval from the departments concerned.

The plant mainly produced four different products through recycling of wastes: First, high-density glacial acetic acid extracted from discarded acetic acid. Glacial acetic acid is an industrial-chemical material. Within 1 month, or, to be more exact, from the last 10 days of March to the first 10 days of April, this plant extracted 3 tons of high-density glacial acetic acid from the discarded materials of a pharmaceutical plant in the municipality. It has also signed a contract for the sale of 30 tons of this product with an industrial supply and marketing company in Yuhang County, Zhejiang. Second, silver retrieved from photo studios' discarded fixing fluid. Since last October, this plant has collected discarded fixing fluid from 30 photo studios, printing houses and hospitals, and after certain chemical treatment, extracted some 100 jin of semi-finished materials, which, after further processing, yielded some 20 jin of pure silver. Third, recycled machine oil, axle oil and so forth from discarded oil. The residues after recyling can be made into other products. Fourth, products made from discarded battery cells.

The small plant scrupulously observes laws and disciplines, and does not engage in speculation or profiteering. It never cheats the customers, does business in a fair and reasonable way, and has paid all taxes according to rules and regulations. At present, each of the seven workers draws 45 yuan against their wages pending the setting up of a regular pay scale according to their individual technical skill and attitude toward work. The net profit will be disposed of as follows: 40 percent for expanded reproduction; 30 percent as bonus funds, and 30 percent to be distributed after discussion and according to individual contributions to the plant's success. By linking the personal benefits of individual workers to the quality of business operation, this plant is now operating in good order and all revenues and expenditures are clearly recorded. All the workers regard the plant as their home, are not afraid of hard work, and are full of enthusiasm. They are also taking active measures to form links with other plants that are operating under capacity so as to increase their productivity capacity and expand the scope of their work in recovering wastes. This will also provide further job opportunities for unemployed youths.

9411
CSO: 5000/4084

NEW COPPER SMELTING METHOD REDUCES POLLUTION, FUEL USE

Beijing GUANGMING RIBAO in Chinese 5 Jul 81 p 2

[Article by GUANGMING RIBAO correspondent Wu Weizhen [2976 1218 2182]: "China Discovered Copper Smelting Method Requiring Low Energy Consumption and Reducing Pollution"]

[Text] For copper smelting, China has discovered an advanced method which requires only low energy consumption and causes little pollution. This new method was the result of 8 years' joint research by the Baiyin Nonferrous Company and six other units. The research was successfully completed in 1980, and with the approval of the State Scientific and Technological Commission, a second-class citation for invention was given in May 1981. This new copper smelting method is now named "Baiyin Copper Smelting Method." The special technical feature of this method is that through the action of a bellow in the smelting furnace, the liquid is violently stirred up, thus facilitating inter-reaction among the gaseous, liquid and solid substances inside. This helps speed up the transmission of heat, improves quality, and strengthens the entire smelting process.

By this method, the smelting gas can be recovered and made into acid. There are also other advantages, such as reduced environmental pollution and fuel consumption, a shorter technical process, and less investment. This method can be used with only coal dust as fuel, thus overcoming the defect of exclusive reliance on heavy oil and conforming to the state's energy policy.

In August 1980, the smelting plant of Baiyin Nonferrous Metal Company began the use of this new smelting technology. According to statistics compiled during the inspection and repair of the furnace by the end of 1980, some 16,000 tons of coal was saved after 149 days' continuous production. From the recovered gas, the production of sulphuric acid was increased by 12,500 tons, and 240 tons of magnesia bricks were saved. Some 7,000 tons of steam was also produced. Thanks to the use of residual heat, the value of the above items totaled nearly 400,000 yuan.

9411
CSO: 5000/4084

USE OF MICROORGANISMS IN SEWAGE TREATMENT SURVEYED

Bejing XIANDAIHUA [MODERNIZATION] in Chinese Vol 3, No 6, 16 Jun 81 pp 14-16

[Article by Lan Tian [5663 1131]: "Microorganisms Purify Sewage"]

[Text] The Perplexing Problems Posed by Sewage

The pollution of our country's water resources has already attracted the concern of the party and government. Preliminary surveys of 30 major rivers and lakes in the country have been made in recent years. They found that the Songhua No 2 River, the Liao River, the Grand Canal between Suzhou and Nanjing, the Huangpu River and the Pearl River have been seriously polluted, primarily by the discharging of untreated sewage into them. Shanghai, this country's greatest industrial city, discharges 2.8 million tons of sewage every day, of which more than 2 million tons goes directly into the river, while Suzhou's rivers are almost entirely sewage within the city limits. In the dry season, the Huangpu River is one-third sewage. In 1978-1979 the river water had a foul smell for more than 100 days. Because of the poor quality of drinking water, large quantities of chlorine are generally used to disinfect it, but this may also result in the formation of carcinogenic organic chlorine compounds. Currently, more than 80 million tons of sewage of all kinds is discharged throughout the country, and more than 90 percent of urban sewage is discharged into water sources without treatment.

The harm done to the public by sewage is shocking. Industrial wastewater, which accounts for about half of the sewage we discharge, contains various wastes from the manufacture of chemicals and agricultural pesticides; pollution by heavy metals is a particular cause for concern. In 1978, sewage was used to irrigate almost 5 million mu of land, and in a certain part of Shenyang Prefecture the cadmium content of rice actually reached the serious pollution level of 2.6 parts per million (rice containing more than 1 ppm of cadmium is called cadmium-containing rice and may not be used for human consumption). In 1974, more than 400,000 mu of wheat fields in Tianjin Prefecture were irrigated with wastewater containing chloral, and more than 200,000 mu of the wheat was not harvested.

In Japan, as industry has modernized, water pollution has brought the Japanese people misfortune and worry. According to incomplete statistics, in the 1960's as much as 180,000 hectares of agricultural land throughout the country was polluted by sewage, and 300,000 agricultural households were affected. Hokkaido is an important fishery area for Japan, but discharge of large quantities of industrial wastewater polluted the sea, so that large numbers of fish, shrimp and other marine animals were killed and catches dropped sharply, in addition to which many marine products were inedible because they gave off a strong stench.

On one occasion it was discovered that coastal residents of Kumamoto Prefecture in Japan were suffering from a disease of the nervous system which came to be called "Minamata disease"; ultimately it was found to be caused by consumption of marine fish and crustaceans contaminated by methyl mercury. As many as 170 persons suffered from the illness, of whom 57 died. In addition, in a certain area of Japan, the inhabitants who regularly ate agricultural crops irrigated with cadmium-containing wastewater developed osteopsathyrosis, colloquially called the "aching disease." More than 200 persons were affected, and 118 of them died. Thus the question of how to purify sewage so as to decrease the harm done to people is already an urgent one.

Use of Microorganisms To Purify Sewage

Current approaches to sewage purification include physical, chemical and microbiological methods. Physical and chemical purification methods have rather high costs, and they entail the risk that new, harmful substances will be produced, resulting in "secondary pollution." These shortcomings can be avoided by microbiological water purification. Accordingly, the use of microorganisms to purify water has already become a topic for energetic research and an extensively used treatment technique throughout the world.

The conversion activity of microorganisms is part of their growth and metabolism and is capable of removing various organic substances and toxic materials from sewage. Both aerobic and anerobic microorganisms can take part in water purification, so that both aerobic and anerobic treatments have developed. The aerobic methods include soil irrigation methods, biological film methods (including the biological filtering method and the biological rotating disk method, the activated sludge method and the biological oxidation pond method. The anerobic digestion (or methane fermentation) method, is the most important anerobic method. Figure 1 is an idealized diagram of the sewage purification process. When suitable types of aerobic bacteria are introduced into organic sewage, they purify the sewage by using dissolved oxygen to transform organic substances in the sewage, in order to obtain energy while they continuously produce bacterial reproductive cells.

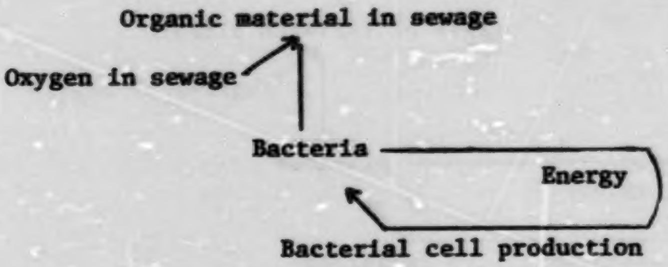


Figure 1. Pollution Purification Process

The Simple, Convenient Soil Irrigation Method

The so-called soil irrigation method uses various soil microorganisms in the purification process.

Recently the soil irrigation method has been divided into two main approaches, the filtering irrigation method and the surface irrigation method. In the filtering irrigation method (Figure 2a), the sewage is applied to the soil 0.3 to 0.6 meters deep, after which it gradually filters into a soil layer 1 meter or more thick, and drainage pipes laid at the bottom collect the filtered water and carry it off. In the surface irrigation method, the sewage flows down a slope from a ditch at the top, as shown in Figure 2b, and the water is collected in a channel at the bottom of the slope, then subjected to a second irrigation treatment. Although sewage purification by the irrigation method results from the action of a complex of factors, the main microorganisms involved in it are bacteria, actinomycetes, fungi, algae and protozoa which live in the soil and carry out effective purification. Nitrite bacilli and digestive bacilli have an important role in converting nitrogen-containing compounds to harmless substances. At present, some highly modernized cities and countries (for instance Berlin and Paris) still use the soil irrigation method for purification.

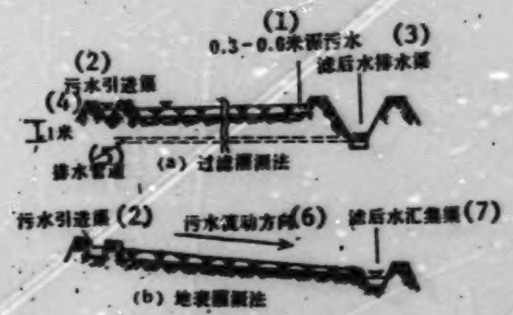


Figure 2. (a) Filtration irrigation method; (b) Surface irrigation method.

Key:
(1) 0.3-0.6 meter deep sewage
(2) Sewage inlet ditch
(3) Filtered water drainage ditch
(4) 1 meter
(5) Drainage pipes
(6) Direction of sewage flow
(7) Filtered sewage collection ditch

The Biological Filtering Method

Biological filtration systems essentially consist of an initial settling tank, a biological filter, and a final settling tank (see Figure 3a). The biological filtering tank is the key component of biological filtration purification of sewage. The sewage to be treated is piped in, sprinkled over the filter material by rotating distributor, and after filtering is removed by another pipeline (see Figure 3b). In the biological filtration tank the various microorganisms busily convert the pollutants to harmless materials. According to their distribution, the microorganisms in the filtration tank are classified as biological film organisms, organisms living on the biological film surface, filter tank cleaning organisms and so on. The biological films consist primarily of bacteria and certain filiform organisms which attach themselves to the filter material in the form of a thin film. In urban sewage treatment plants the film in biological filters is generally 2 to 3 mm thick. When organic pollutants in the sewage come in contact with the surface of the biological film, they are acted on by enzymes produced by the microorganisms in the film and are broken down and eliminated. Substances which are difficult to break down are made harmless by being decomposed by filter tank cleaning organisms. If the organisms on the surface of the biological film grow rapidly, they greatly increase the purification rate over that achieved by the biological film alone, thus increasing the treatment of efficiency of the filter tank as a whole.

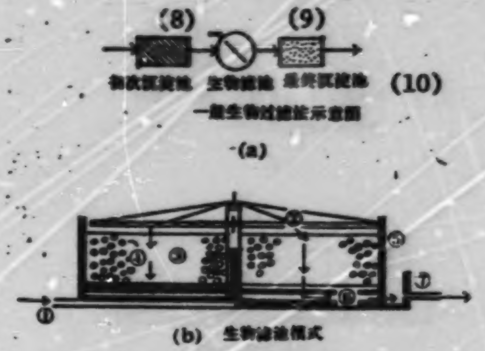


Figure 3. The Biological Filtration Method
(a) General biological filtration method
(b) Biological filtration tank

Key:

(1)	Water inlet	(6)	Percolation equipment
(2)	Rotary water distributor	(7)	Filtered water
(3)	Filter layer	(8)	Initial settling tank
(4)	Filter material	(9)	Biological filgration tank
(5)	Tank wall	(10)	Final settling tank

Biological filtering appeared at about the end of the 19th century, and was extensively used in the 1930's, with an increase of about 30 percent in the purification capability. In present-day Japan, biological filtration is mainly used in the reprocessing of urban blackwater following digestion.

The Ingenious Biological Disk Method

For small-scale sewage purification, the biological disk method is best. In essence, it involves slow rotation of disks to make an attached biological film come successively in contact with sewage and air, resulting in purification of the sewage. The biological disk equipment consists of a sewage tank and many parallel thin disks supported by a horizontal axle. Some 40 to 50 percent of the disk surface is submerged in the sewage in the tank, while the rest is above water. The disks are rotated at slow speed. The capacity of the semicylindrical sewage tank (Figure 4) depends on the specific situation. The disks are made of a hard, light material such as aluminum, plastic or synthetic resin. The radius of the disk depends on the amount of water to be treated, and generally ranges from 1 to 3 meters, while the thickness is from 1.2 to 1.5 cm (see Figure 4b). Stuttgart Germany is the "home" of the rotating disk method, for the first rotating disk experiments were conducted there. Subsequently, following continual research and improvement, it has come into use in many countries. Some hospitals in this country use the disk method to great hospital sewage, which is then disinfected with chlorine, producing excellent results. The rotating disk method has the advantages of simplicity of operation, low power consumption, small space requirements and the like.

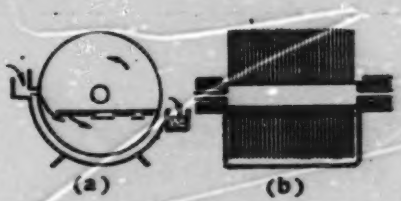


Figure 4. The Biological Rotating Disk Method

Gratifying Results From the Biological Oxidation Pond Method

Since 1961, as chemical engineering plants have sprung up in large numbers around Yar Lake in Hubei, large quantities of untreated wastewater containing a wide variety of highly toxic agricultural pesticides have been discharged into the lake, seriously polluting it. This country's relevant scientific workers used the biological oxidation pond method for the first time in this country to successfully control pollution in the Yar Lake water system. They built embankments in one of Yar Lake's tributary lakes, Yanjia Lake, in order to create ponds, then built flow-retarding dams, producing five multistage sequential oxidation pond systems with a total area of 6,000 mu to treat the wastewater. The pollution belt, which previously had been 7 km long, was confined within the oxidation ponds, and the combined work of algae and bacteria decomposed poisonous substances in the water, thoroughly purifying it. After treatment, the Yar Lake system recovered its "youth," the ecosystem returned to normal, and the drinking water for the 300,000 lakeshore residents and the irrigation water for 400,000 mu of farmland were safeguarded. The use of the biological oxidation ponds in this country achieves the objective of comprehensive utilization and conversion of harmful things into beneficial ones, opening a new approach to the control of agricultural pesticide pollution in this country.

At present, 39 countries worldwide are making extensive use of oxidation ponds to treat domestic sewage and industrial wastewater. In the United States there were 631 biological oxidation ponds in the late 1950's; by the early 1960's the number had increased to over 3,500, and it jumped sharply to 4,888 by 1970, accounting for one-third of municipal sewage treatment in the United States. In Germany, fish can even be raised in a properly managed oxidation pond, yielding 500 kg of fish per hectare of pond surface.

Killing Two Birds With One Stone by the Digestion Treatment Method

In their life processes, some anerobic organisms can convert a variety of organic compounds to methane and carbon dioxide. Such phenomena were first discovered in nature by Woerta [phonetic] in 1778. Subsequently they were used for purifying sewage, receiving the name of digestion treatment of methane fermentation (Figure 5). The water is first pretreated in a grit tank to remove insolubles, then purified in the digestion tank, and the methane and other gases produced are stored in storage tanks. This sewage purification method consists of two main stages: liquefication and gasification. In the liquefication stage, various organic substances in the sewage are decomposed by the microorganisms' extracellular enzymes into sugars and amino acids, after which these conversion products are made into short-chain fatty acids by the intracellular enzymes. Such types as clostridium, Bacillus, Staphylococcus, Pseudomonas, Proteus and the like play an active role in the liquefication stage. In the gasification stage, 10 or more kinds of methane bacteria decompose the products of the liquefication stage into methane, carbon dioxide and the like. In the digestion treatment of sewage, high temperature fermentation (usually at 51-53°C) is frequently used in the digestion tanks (such as digestion tanks Nos 5 and 6 in Figure 6); under identical conditions, high temperature fermentation can treat four to five times as much organic material and produce four to five times as much methane and other gases as in moderate temperature fermentation.

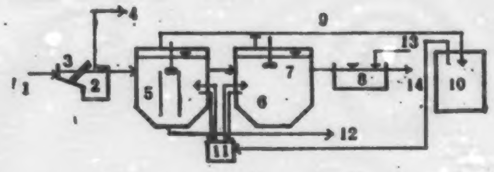


Figure 5. Digestion Treatment Method

Key:
(1) Input sewage and sludge
(2) Grit tank
(3) Screen
(4) Residue from screen
(5) First digestion tank
(6) Second digestion tank
(7) Mixer
(8) Dilution tank
(9) Digestion gas
(10) Storage tank
(11) Heat exchanger
(12) To sludge treatment equipment
(13) Dilution water
(14) To secondary processing equipment

Judging by investigation and use worldwide, the digestion method is well suited for purifying sewage with a high organic content. Many countries use this method to treat residual liquor from alcohol plant distillation processes, yeast-containing wastewater, ammonia-production wastewater and production wastewater from food processing, production of antibiotics and the like, achieving maximum purification effects of 90 percent.

The digestion treatment method has many advantages. The equipment required is simple, since the facility consists primarily of a digestion tank and a storage tank. This method not only purifies sewage, but also recovers large quantities of methane gas which is usable as a fuel, thus saving on expenditures and decreasing the cost of sewage purification, so that it produces a double benefit.

Recently, some foreign scientists have unexpectedly discovered in sea water many varieties of bacteria and other microorganisms which can eat oil pollutants on the sea surface. Geneticists hope to concentrate their various food preferences in a single type of microorganism, i.e. to create a superbacterium which can play a greater role in environmental protection. It may be predicted that microorganisms will come to show their mettle in mankind's struggle against sewage.

8480
CSO: 5000/4083

BRIEFS

GUANGDONG ECOLOGY FORUM--A large-scale scientific forum on ecology was held in Guangzhou for the first time from 24 to 28 June. More than 180 scientists and scientific-technological personnel attended the provincial forum during which 87 papers were read and the Guangdong Provincial Ecology Society was formed. Guangdong mayor Liu Tianfu was invited to become honorary president of the society. [OW101439 Beijing Domestic Service in Mandarin 0900 GMT 6 Jul 81 OW]

ENVIRONMENTAL MEDICAL SCIENCE CONFERENCE--Jinan, 18 Jun (XINHUA)--The first national conference for academic exchange in environmental medical science, jointly sponsored by the Chinese Environmental Sciences Society and the Chinese Medical Society, was held in Taian, Shandong, 9-12 June. The conference decided that in future, scientific research should focus on the effects of environmental pollution to human health. In the past year and more, scientific researchers in related fields have coordinated their efforts and scored numerous achievements in the research of medical science. The conference received 156 theses that dealt with methodology, interdisciplinary study, atmosphere, water, noise as well as the effects of heavy metals, carcinogen, farm chemicals and other pollutants on human health. [Beijing XINHUA Domestic Service in Chinese 0763 GMT 18 Jun 81 OW]

CSO: 5000/4086

ONE-THIRD OF FORESTS ENDANGERED BY POLLUTION

Prague ZEMEDELSKE NOVINY in Czech supplement NAS DOMOV 3 Jul 81 pp 8, 9

[Article by Olga Sumberova: "Forest Renewal"]

> [Text] Prof Miroslav Vyskot is a witty, gregarious individual who is highly sought out as a social companion. Destiny once steered him among scientists who were as far removed from his specialty, forest cultivation, as he was from their chemical laboratory retorts. He listened with interest to laments that the source of gin and pine brandy would soon dry out in our forests because the number of juniper trees was slowly but surely decreasing, and foreign exporters had found better markets for their aromatic berries.

The professor is not a lover of alcohol but this information caught his attention. A shortage of the necessary oils could cause difficulties not only in the manufacture of liquers but also in other types of production. How could this be prevented? The aroma of pine needles is plentiful in the forest. Can it be captured and stored somehow?

Replace Juniper Berries with the Oil Proper

The head of the forest cultivation chair of the forestry faculty at the Higher School of Agriculture in Brno, Prof Miroslav Vyskot, corresponding member of the Czechoslovak Academy of Sciences, called on workers in the chemical sciences for help. Together with Jiri Uher from the Higher School of Chemical Technology in Prague, they carried out an experiment. They removed the needles from 5 tons of freshly hewn spruce. They then ground up and distilled the needles. Following the trusty recipe of our grandfathers--and with the aid of modern technology, they arrived at the desired result, namely, beautifully aromatic oil.

The approaching calamity for the liqueur industry was thus averted. The two scientists probed further to determine to what other uses the extract might be put. Foremost, for the manufacture of medicaments, but also for perfuming soaps and detergents, for dyes and varnishes. The essential oil, however, was not the only product of the distillation process. The pine needles also yielded wax which is useful in chemical technology. Moreover, the redistilled water in which the needles were leached, will provide a welcome raw material for the perfume industry.

The softened, scalded needles, freed of oil and wax, remained in the distillation vessels. The workers who participated in the distillation process, took the macerated needles and fed them to their herbivorous animals. Professor Vyskot found that cattle reacted very well to this unusual form of fodder. This then was a splendid idea, since the needles also possess nutritive value.

Low Cost Fodder

Contemporary scientific discoveries and inventions are not the chance accomplishment of individuals, but the crowning achievement of team work. Even in this case, the exception proved the rule, an exception, of course, preceded by long, purposeful labor.

Professor Vyskot, a forestry manager body and soul, was never reconciled with the terrible waste of the precious forest biomass. How much of it is destroyed in the handling of scrub? No one wants the thin trunks of young trees, they are burned with their branches as useless waste, or they remain in the forest as food for all kinds of pests. And this involves large quantities--the preclearing timber harvest in Czechoslovakia represents a third of the overall annual yield. How much work it takes to produce a tree from seed, and then a third of the production goes to waste. Even our republic which has 4.5 million hectares of forests, which in Europe puts it in second place in forestry assets behind Switzerland, cannot afford such luxury.

The utilization of pine needles for fodder is not a new concept. All efforts, however, have encountered the problem that this mixture is difficult to digest. The pine oil irritates the digestive tract of animals, consequently, the powder produced from it is used only up to 3 percent in fodder as a vitamin and dietetic additive. Something else altogether, however, are pine needles which, in the course of the distillation process, were softened and freed of oil and wax.

As was demonstrated in additional tests in cooperation with the Animal Feeding Research Institute and the Animal Physiology Research Institute, the pine-needle distillate has the same nutritious value a lucerne and, when fresh, can be served as a warm drink, but can also be dried and granulated. Production of such fodder will not overburden the energy supply of agricultural enterprises, since brown branch and twig chips can be used to produce the heat needed for the distillation process.

From 1 ton of pine needles it is possible to gain a ton of liquid fodder and 3 to 5 kilograms of oil (1 kilogram costs up to 500 hard-currency korunas) which will pay for the required labor many times.

Professor Vyskot and Jiri Uher's patented discovery has been applied since June of this year in the JZD/Unified Agricultural Cooperative/ Jilov near Prague, where for several years now pine needles have been processed for vitamin-rich powder. The discovery has previously been tested by the Military Forests and Farms in Lipnik nad Becvou. Additional application is planned in the forest cultivation enterprise of the Agricultural College in Brno and in Sliesovce in Slovakia.

Waste or Valuable Raw Material?

Professor Vyskot, since May of this year Laureate of the Klement Gottwald State Prize, has for 30 years dealt with the problems of primary production of forest biomass. Pine needles are only a small portion, a much more valuable raw material with an infinitely broader scale of application is the timber proper, which we have not yet learned to manage wisely.

With an average annual harvest of about 20 million cubic meters of trunk timber with bark, there remain in the forest about 7 million cubic meters of so-called tree waste, i.e., branches, tree tops, and bark which in the past served at least for home heating. Today, however, we get rid of it all as undesirable ballast. Fire, forest parasites and pests and decay consume about one-third of the annual production, even though this material could be used where it would greatly benefit the national economy. This is no Utopia. Professor Vyskot has over long years amassed a wealth of information on the development of forest biomass utilization, on what processing technology had already been achieved, and in which countries it is being applied.

Woodchip boards, clustered materials, and paper from timber waste, are not new even in our country; however, we must develop this type of production on a much broader scale. Wood as a replacement for gasoline and heating gas has been used successfully as far back as World War II. Now we have available more perfected methods. Through methane fermentation, it is possible to use wood to obtain biogas, methane, and wood alcohol fuel. Through chemical and enzymatic hydrolysis we can also produce ethyl alcohol.

Every elementary school pupil knows the importance of each ton of crude oil for the republic, and how hard and expensive it is to purchase it on world markets. However, not only those who prepare the class curriculum but the public as well may not be fully aware that a ton of crude oil can be replaced by 6.25 tons of wood, and that from 1 ton of wood it is possible to produce 100 liters of 120-octane ethyl alcohol. In other words, 6.25 tons of wood equals 4 or 5 100-year-old spruces, while one good-size spruce yields over a cubic meter of raw timber. Nowhere is it decreed that to produce wood or ethyl alcohol we must use only beautiful, healthy trees. In all probability, brown chips, i.e., tree waste would be enough.

It is no secret to anyone that we export even unprocessed lumber and for the acquired hard currency we in turn purchase fodder for our farm animals. At the same time, wood yields molasses with high sugar content from which it is possible to manufacture fodder mixtures, as well as fodder yeast.

What else can be wrested from wood? Such valuable materials as lignin, vanilin, furfurol and fertilizer made from tree bark. All these processes have already been mastered by science, it is only a question of applying them in practice.

Forest biomass can be fully utilized without any waste, we can process it into highly useful and needed quality products. What's more, this can be done through technology using its own energy sources.

Obstacles Which Must Be Overcome

Professor Vyskot reminds us that during the Great Patriotic War when the fascists stood before Moscow, even the most expensive tank was cheap when it became a matter of saving the fatherland.

We should not consider it an exaggeration when a scientist of world renown speaks in the same manner of the need for more effective forest protection, and of concentrating all efforts and means toward the elimination of harmful industrial emissions which already threaten over 800,000 hectares of our forests. It is extremely urgent to resolve the problem of separating the sulphur from coal incineration and adopting industrial technology accordingly. The untenable deterioration of our living environment truly dictates such a course.

Direct damage caused by emissions represents an annual incremental loss of 800,000 cubic meters of timber worth about 350 million korunas and indirect damage of 1.5 billion korunas. Pollution not only destroys the scrub in the Krusne and Jizerske mountains, but is also spreading into the Krkonose Mountains, as well as the Orlicke and Bezkydy highlands. In 10 years this menace will threaten a third of all the forested areas in the CSSR. It is certainly correct to replace the delicate spruce with hardier timber, however, we must remember that no tree is totally immune against perpetual emissions, acid rain, and poisons with which these substances impregnate the soil. Unless we succeed in quickly and radically reducing the noxious materials, the forest scrub in our border highlands will be devastated and destroyed by the end of this century.

The forest represents not only timber which is so extremely useful. Damage due to industrial emissions means great production losses which are even greater when we add the harm done to the effects of the forests on water management, on the soil, climate and on our health. If we lose the forest, we also lose water, and erosion will wash or blow away the topsoil. No life is possible without water and soil.

At a time when almost all countries are envious of our forestry treasure, when renewal of timber assets is in the fore, and science offers more and more new discoveries with respect to their utilization, it would be an unforgivable sin to waste the forests and their products. Professor Vyskot maintains that indifference is one of the worst human traits. We have no right to be indifferent to our destiny because not only our grandchildren and children but we ourselves would already reap a bitter harvest of irrationality and carelessness toward nature. Let us be wise managers and utilize thoughtfully that which we possess. Let us enjoy and multiply the riches of the forest.

9496
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SEVERE WATER POLLUTION PROBLEMS DISCUSSED

Port Water Pollution

Szczecin KURIER SZCZECINSKI in Polish 9 Jun 81 pp 4-5

[Article by Edward Wituszynski; portions within slantlines printed in boldface]

[Text] Environmental pollution, in this case water pollution, is the price that has to be paid for industrial development and the development of civilization. Arresting and eliminating these processes is extremely costly, and we do not always have the means at our disposal for necessary action. Water pollution control in the Baltic Sea is the subject of the Helsinki Conference, which Poland ratified. Because Poland initiated that agreement, the protection of sea and port waters leaves much to be desired here, especially when such legal (responsibility for pollution and degree of penalties) and technical aspects come into play.

The firm responsible for "cleaning up" the port waters at Szczecin and Swinoujscie; cleaning storage tanks and cargo holds; collecting odds and ends from cargoes and washings, ballast and bilge waters; removing the effects of oil overflows and collecting garbage from galley ships and luxury liners is the State Firm for Sea Services, "Ship-Service," which functions within the organization, Szezecin-Swinoujscie Port Group. For clarity, let's add that "Ship-Service" also is credited with such services as maintenance and painting of ships during their docking, cleaning of the ships' boilers, platform and ladder inspection, and delivery to the ships of lubricating oils from foreign companies and of drinking water, small articles of freight and wine. With regard to the latter, this firm is the only supplier of wine in barrels on the Polish coast, and it has at its disposal a special base with a capacity of 2.8 million tons.

/"On an annual basis, we collect 50,000-60,000 tons of pollutants, of which half is oil-related,"/ states "Ship-Service's" director, Jerzy Domiszczak. /"Neverthe less, it is our opinion that despite the fact that washing and throwing of bilge water and garbage into the sea and sea areas is punishable and strictly prohibited, 30-40 percent of the pollutants ends up in the water."/

In order to combat oil-related pollutants in the sea areas, "Ship-Service" has three self-propelled, automatic, swimming oil collectors, which are popularly called "catchers." One of them works in Szczecin and two in Swinoujscie, systematically for 8 hours every day. An accidental overflow of oil can occur on any ship. In those circumstances--and it is crucial to act quickly through use of appropriate technical measures to reduce potential damage from oil overflows--a special emergency unit is ready 24 hours a day both in Szczecin and Swinoujscie. The unit has the use of oil barriers (together 1,200 mb), oil collectors, tugboats and aggregates for washing the wharfs and the ships' sides, as well as the absorbent agent "Karax." The absorbent agent is used where the "catchers" cannot go. Furthermore, a barge-tanker of 100 tons' capacity is in constant readiness, as well as independent, English-produced oil collectors. During the transfer of oil products in Swinoujscie, a so-called escort is maintained, with technical measures ready for use on a moment's notice.

For the collection of ballast and bilge waters, "Ship-Service" has the use of specially adapted barges and connecting tankers ("Turbacz"), as well as tank trucks. Yes, the collection of pollutants can take place both in the water and on the land. The firm also possesses a swimming treatment plant for ballast water ("Tarnica"), on which the device "Fram" is mounted. All of the collected water passes through this treatment plant, which brings about a high degree of cleanliness. The purchase of a second, similar, special unit is anticipated.

As we have mentioned, collected items include dry pollutants (i.e., sweepings), residues left from the washing of holds and garbage from ships. The residues left from the washing of holds were supposed to have been dumped at the industrial refuse dump in Soluje. The firm even allotted 11 million zlotys for the right to participate in the investment. A geological survey of the area revealed that these residues could not be dumped there, and also the municipal waste treatment plant could not accept them. As a result, the residues are dumped into silting fields.

/"The collection of garbage from ships is going pretty well,"/ says director Domiszczak. /"The Maritime Office checks to determine whether the ships have complied. The ships' garbage is packed in plastic bags, which our trucks haul away. On the other hand, we cannot collect sanitary waste, although we would like to do it, because we have waste-removal trucks. We have a barge for feces. However, both the trucks and the barge do not have anywhere to put the stuff. RPWK does not want to accept it, citing sanitary and epidemiological regulations. The waste treatment plants are overloaded. A similar situation exists in Swinoujscie. Thus, the ships throw it into the sea water."/

A deserving note is that the processing of 30,000 tons of oil-related pollution in water produces about 1.5 million tons of oil (containing 10-20 percent water). This oil is burned in specially adapted boilers in the heat generating plant at Stargard Szczecinski and in the boilers at "Keramzyt."

Despite this information which is optimistic in principle, it is important to realize that "Ship-Service's" state of possession and possibility is still insufficient, while water pollution control is not in accordance with regulations. The further supplying of necessary equipment demands the control of oil pollution and the eventual resolution of problems like the collection of ballast water or feces. As we stated in the introduction, the protection of the natural environment absorbs substantial measures and demands energetic action, when each delay and negligence bring many times higher secondary costs, which manifest themselves in other areas.

Poisoning of Fish Investigated

Warsaw ZYCIE WARSZAWY in Polish 24 Jun 81 p 2

[Text] The directorate of the State Fishing Farms in Olesnica (Pila Voivodship) recently stated that in several ponds at the farm, 40,000 frying carp have succumbed to poisoning. To date the cause has not been established. There is no doubt, however, that the losses are significant, and this year's supply will be poorer by about 40 tons. This is one-tenth of the annual production at the Olesnica fish farm.

Initial research conducted by the Veterinary Institute in Poznan and the firm's own analytical laboratory, the purpose of which was to establish the causes of the poisoning, admitted to the possibility that chemical measures used to combat the lymantria monacha moth, which has been attacking the forests in northern Poland for the last 3 years, may have caused the poisoning. After spraying had taken place, torrential rains and violent storms followed, which could have caused runoff from higher forest areas into nearby ponds.

That version, however, is emphatically denied by foresters who state that chemical agents used to dust the forest areas could not have poisoned the fish.

Sick Eels

On account of the continuing phenomenon of widespread eel parasites in the Puck and Gdansk Bays, resulting from toxic and bacterial diseases, the chief sanitary inspector once again warns against the purchase and the consumption of fish from uncertain sources (open-air markets and other haphazard places).

Ecological Damage in Gdansk Bay

Warsaw TRYBUNA LUDU in Polish 5 Jun 81 pp 1, 4

[Article by Zbigniew Wrobel; portions within slantlines printed in boldface]

[Text] /A year ago, the situation was alarming. This year, it is dramatic. Next year, a calamity may take place--in Gdansk Bay and the integrally connected Puck Bay, an ecological time-bomb has exploded!/

/The years of unconcerned and destitute fancy as regards sewage management in the Vistula River's drainage basin and along the Baltic coast bear fruit today in the contamination of the water in both bays which is lethal to life. What is worse is that the chances for a quick return to normal are not seen./

I was a participant at one of the saddest press conferences ever; i.e., /"The Ecological Catastrophe of Gdansk Bay--Its Causes, Results and Threats."/ A several-hour visitation of points where the contamination can be seen on a full scale preceded discussions with the Gdansk governor who initiated the all-Polish meeting of journalists.

We witnessed the results of poisonous sewage floating from the "East" waste treatment plant; e.g., /sick eels and large waste dumps of phosphates and gypsum at

Wislinka./ In 1973, citing bacterial pollution, authorities closed the first beaches at Puck. This was followed by closings in Sobieszewo, Orlowo, Jelitkowo and Brzezno; several beaches along sandbars in the Vistula and finally this year, all swimming areas in the bays. Water and sand are contaminated; during a storm, when splashes from waves create mists captured by the wind, maritime air also endangers the public health.

/At this moment, fish and fishermen are paying the price for the catastrophic state of the Baltic areas adjacent to the Tri-Cities of Gdansk, Gdynia and Sopot./ As a result of widespread eel parasites and eel infection from some unknown disease, over 360 individual fishermen and members of cooperatives have lost a great deal of earnings. Recently introduced payments for sanitary catches of sick fish have not compensated for those losses.

/Shortly, calculated in zlotys, the bill for losses will be paid by everyone living on the bay earning a living from tourism/; i.e., 14,000 persons employed in hotels, boarding houses and vacation centers for 34,000 tourists, as well as in private quarters for the same number of clients. /This year, there are still vacationers, because they reserved places earlier, but next year, they will not come. What for? It will be forbidden to swim in the sea or to sunbathe on the beach!/

What is currently taking place in Gdansk Bay is not exclusively the concern of the Gdansk coast; it is a problem with ramifications for all of Poland and one that must interest everyone. /For almost 10 years, coastal ecologists have warned about the growing threat to the bay's natural environment; their prognoses have come true to the year./

Information like this has been taken lightly. Even now there is no special inclination to save the bay--stopping the degradation process will cost billions. On the coast, in order to limit during the course of 6-7 years only and exclusively the most threatening (from a sanitary point of view) contamination from bacterially treated feces, it is necessary to invest over 5 billion zlotys to enlarge the "East" waste-treatment plant, to enlarge the waste-treatment plant at Debogora near Gdynia, to build a waste-treatment plant for the Hel region at Swarzen, to enlarge the sewer system at Orlow and to find the means by which to deposit phosphates, gypsum and fly ash from electrical generating plants.

/This year, the amount of expenditures for devices to clean sewage in the area of Gdansk Bay is 46.5 million zlotys. That is only a drop in the bucket!/

The Baltic coast can do no more. The rest depends on the whole country, because the Vistula River carries 94-96 percent of the pollutants. In the river's drainage basin, it is imperative that the deposit of contaminants be limited, and everyone must be interested in this task, from Silesia to Pomerania.

/We cannot count on the strength of nature--the complete renewal of the Baltic waters will take 30 years./

Swimming Banned in Baltic

Gdansk GDANSK GLOS WYBRZEZA in Polish 2 Jun 81 p 1

[Text] The provincial sanitation inspector in Elblag, Dr Agnieszka Sulma, informed us yesterday that a subsequent test of the purity of coastal Baltic waters within the area of Elblag Voivodship had revealed a worsening situation. Water pollution is increasing, which creates a direct threat to the health of individuals swimming in those waters.

The ban on swimming and water sports at present is compulsory in the area from Wisloujscie through Mikoszewo, Jantar and Stegna to the western edge of Sztutowo through Krynica Morska to Piaski near the national border. It is not ruled out, however, that the banned zone will be shifted in the near future to the east, because analyses prove a worsening of coastal water quality even in the swimming areas at Sztutowo and Katy Rybackie.

With regard to the beaches in the area of Gdansk Bay within Elblag Voivodship, they can be used under the condition that the decision is subject to change in case of a deluge of polluted water from the bay or confirmation of an epidemiological threat. To be honest, however, the decision on that matter was made on feeling, because the Elblag sanitation and epidemiology office does not carry out defined tests on the purity of beach sands because of a lack of personnel and equipment. We feel that the Elblag governor should become interested in the problem as soon as possible.

In order to supplement this alarming information, it should be noted that Elblag Voivodship has other areas that have been inaccessible to swimming for several years; e.g., Wislany Lagoon, Suski Lake and Nogat.

Ecological Disaster in Coastal Areas

Gdansk GDANSK GLOS WYBRZEZA in Polish 29-30 May 81 pp 1, 3

[Article by Krzysztof Myjkowski; portions within slantlines printed in boldface]

[Text] /For specialists in the area of environmental protection, it has been obvious for a long time that Poland has three regions of an exceptionally large and a continually growing threat of ecological catastrophe. They are the mining-smelting area of Silesia and two large industrial centers lying at the mouths of the two largest and most contaminated rivers, which carry sewage from practically the entire country--Gdansk and Szczecin. The central authorities also know about it, but they opted for the luxury of not acknowledging certain facts. Consequently, all reports about the rapidly growing threat to the Polish environment and its results were taken lightly./

A report on the subject, covering the eastern Baltic coast, was presented in 1973 by the presidium of the People's Voivodship Council in Gdansk to, among others, the chairman of the Council of Ministers. It was received in Warsaw with the manifestation, "hysteria from our comrades in the provinces." Now, the dismal visions contained in that report are being verified today to the last iota. The waters of Puck Bay, Gdansk Bay and Wislany Lagoon should practically be closed to tourism and the economy, as they threaten people with an epidemic of various diseases at any moment. There is talk about the radioactive properties of phosphates deposited near Gdansk by the adjacent phosphate fertilizer plant. Particulates from the Siarkopol sulfur plant and gases from a refinery transform recently fertile soils in the Zulawy area into the desert along the left bank of the Vistula River.

Only fragments of knowledge about the state of the natural environment along the Baltic coast have appeared in the press. It may, therefore, be time to present a more complete picture of the situation.

The Bay--Not Everything Has Died

"Not everything has died"--that could be stated with a shred of hope, thinking of the waters in Gdansk Bay. It is a wonder, however, that certain life forms continue to survive in the bay, since it will soon have every possible characteristic of an ecological tragedy. Its bacteriological pollution in places even exceeds by 1,000 times the permissible levels of pathogenic bacteria in open waters. The rapid growth of coli bacteria leads one to assume that the number of bacteria is also growing, which causes, among others, dysentery, the dangerous disease among humans in the alimentary canal. Above all, the cause is the lack of biological-waste-treatment plants in the Gdansk region. In effect, the Tri-Cities are forced to deposit in the sea about 220 water-wagons per day of municipal sewage which is cleaned only mechanically. Over 3,000 cubic meters of incompletely cleaned sewage are disposed of daily in Puck, and 100 cubic meters in Jastarnia.

Besides the bacteriological threat in the bay, there are others in the water of a physicochemical variety; e.g., highly poisonous organic compounds and heavy metals (primarily mercury, lead, cadmium and arsenic), all of which exceed the allowable limits many times over. There are more and more detergents (laundry substances) and oil-based substances in the sea. More often than not, the Vistula is their source (70-96 percent), followed by ports, shipyards, maritime transportation, local industry and the municipal economy.

The result of this unhampered torrent of poisons spilling into the Baltic has already been described. All the same, I shall add and bring to mind once again the following:

The Tri-Cities' beaches are closed. Eels are dying in large numbers; thrown by the waves onto the shore, they spoil and threaten an epidemic. Bulltrout and salmon are disappearing completely, and herring are ill. Cod, living on the poisonous filth, themselves are becoming carriers of many diseases. The presence of compounds of mercury, lead, arsenic, zinc, copper and iron, all of which are dangerous to human health, as well as of polyvinyl chloride pesticides used in substances to protect plants, have been discovered in the muscles and liver of cod. Entire species of marine flora are disappearing. Hundreds of marine birds die during the course of a year from the oil plague.

Somewhat better is the state of inland waters along the Gdansk coast, with the exception of the Vistula. Nevertheless, since 1973, when the previously cited report from the People's Voivodship Council was issued, that state also has experienced a marked deterioration. Even 6 years ago on 1,400 km of the eight most important rivers in Gdansk Voivodship, 810 km were of first-class cleanliness (suitable for swimming) and 150 km were third-class (designated exclusively for industrial and agricultural needs). In 1978, the Vistula lost for good its second-class status on the lower section. One year later, only 730 km of the coastal rivers, from the original 1,400 km, could be considered first-class. On the other hand, the amount of contaminated water is growing so rapidly that fourth- or fifth-classes of cleanliness may have to be introduced to define water quality. Included here, among others, is the Wierzyca from Starogard to the mouth. The Radunia, with numerous water intakes for the Tri-Cities and up to 1975 practically crystal clear, now has places where the water quality is third-class.

Relatively speaking, the state of the lakes is quite good. From about 600 lakes, only a few were completely destroyed (e.g., Karczemne and Klasztorne near Kartuzy, Wierzysko and Grabowski near Koscierzyna), the reason being the disposal of untreated municipal sewage in them. Nevertheless, quite a few lakes have already lost their first-class status to second-class (e.g., the popular Lake Mausz) because of nearby camping areas, which for the most part are not generally supplied with waste-treatment plants.

The principal cause of pollution in inland waters is the growth therein of biogenetic elements like nitrogen and phosphorus; i.e., those used in chemical agents to protect plants through field spraying. This is followed by the phenomenon called eutrofication; i.e., the rapid growth of plant life. After taking oxygen from the water, the plants quickly die and spoil. It is especially for this reason that life is dying in lakes and rivers deprived of oxygen. No less threatening is untreated sewage discharged from agriculture, agricultural service plants and area industry. And possibly the most threatening is the insignificant cataloguing and control of streams and ditches into which production waste from the State Center for Agricultural Machines, dairies or individual farms is illegally discharged, causing the growth of bacteriological pollutants.

Creeping Poison

A significantly larger ecological threat to the Baltic coast than the filth in the inland waters is municipal and industrial waste. In such large concentrations of people and production areas as the Tri-Cities, problems are created, which in the country's present situation become threatening to the same degree and difficult to resolve. The construction of suitable refuse dumps is extremely costly, and in the case of Gdansk or Gdynia almost impossible because of the absence of places to locate them. Meanwhile, the overloaded waste-storage areas are threatening the underground waters with contamination. It is especially forbidden to discharge anything into the underground waters, since it would mean severing the Gdansk coast from access to drinking water that at present is furnished by the Radun lakes, which also are fed by underground waters.

The best (and maybe the only) solution to the elimination of municipal waste would be the construction of a modern refuse burner. To be sure, it is more expensive than a normal refuse dump, but it would quickly pay itself off. A burner is also a producer of energy, building materials and sought after heavy metals.

Worse is the elimination of industrial waste. During the course of their 12 years' existence, the waste-storage areas at GZNF [Gdansk Phosphorous Fertilizer Plants] have produced over 7 million tons of phosphorus and gypsum. About 800 tons still come out every month. In that amount, the deposits can possess radioactive properties. They are already causing illness among people, cattle and poultry, and sterilizing the soils in the Zulawy area. Harmful compounds penetrate into the depths of the earth, spreading in every direction at a speed of 20 meters per year. Meanwhile, the water intake for the southern neighborhoods of Gdansk is found only a few kilometers from the place of deposit. Consequently, if during the next 2 years the chemistry department does nothing to eliminate the waste-storage areas for phorphorus and gypsum, GZNF will have to be closed.

An equally burning need is the construction of a group of bunkers to store industrial waste with strong toxic properties. The 32nd version as regards the location of a refuse dump for the Tri-Cities' heat and power generating plant recently was rejected, as had been the case with the previous 31 because of a threatened ecological conflict. Drowned ash is therefore in the former lake at Letnica. However, that lake also has a limited capacity. In a short time, it will fill up to the top. What then? There is much to be said for the fact that the ash will have to be carried out for a distance of several score or even several hundred kilometers. At that time, the cost of transporting the slag will be more than the entire cost of creating electrical and heating energy for the Baltic coast.

One Can Still Breathe

The cleanest thing over the eastern Baltic is the air, inasmuch as "barely" a 40 percent increase in particulate emissions and not much more than a 130 percent increase in gaseous emissions has occurred since 1973 (as compared to the 1,000 times growth in water pollution, this increase in air pollution seems only a trifle). Moreover, the threat is felt only relatively close to small areas near the polluters; i.e., Siarkopol, GZNF, the heat and power generating plants, the ports loading apatite and some obsolete production plants like Fala and Olowianka or the gas plant at Gdansk. Each year those firms emit into the atmosphere several hundred tons of poisonous compounds; i.e., SO_2, fluoride, nitrogen and hydrocarbons, as well as many particulates from the heating plants. The results of their pollution are evident, among others, on the monuments in Gdansk's Old Town Square. Air pollution is on the increase in Sopot and Starogard on account of too many small boilers in those towns. The causes of this pollution are primarily the absence on the market of dust-collecting devices like electrical filters and cyclones, the inefficient cleaning fixtures in many plants (mainly at GZNF) and the poor quality of fuel.

The problem of atmospheric pollution from transportation sources should be treated separately. These are especially harmful to human health as regards the content of lead compounds. As an indication of their very high concentrations, they cause symptoms of poisoning after only an hour's exposure among police officers directing traffic at intersections of major arterial roads within the Tri-Cities. Meanwhile, inspections conducted in transportation bases by the Division of Environmental Defense at the Provincial Office invariably confirm that over 50 percent of truck engines possess inefficient carburetors and exhaust systems. It is, therefore, necessary to build more quickly district roads, among others. The only Tri-Cities road unfortunately cannot wait any longer for an additional roadway and decent exits from the urban centers.

What Is To Be Done?

It has been obvious for a long time what and when should be done to check the advancing pollution of the environment along the Baltic coast. Appropriate programs, perspectives and detailed specifications have been in the possession of the provincial office for years. The only question is: Who has to do it and how much will it cost?

During the course of the next 10 years, the construction of biological-waste-treatment plants for water-pollution control is essential; e.g., East (1 billion zlotys), Debogora (450 million zlotys) and Swarzewo (380 million zlotys), as well as the Tczew waste-treatment plant (390 million zlotys), for GZNF (700 million zlotys) and a sewer system for Gdynia-Orlowo (200 million zlotys). Further down the list, according to priorities of importance, are the biological-waste-treatment plants for Starogard and Koscierzyna, a sewer system for the fattening farms at Strzebielin, Niedamow and Grabow, as well as the Morena sewage collector to protect the water intake at Straszyn.

As regards air pollution control, small boilers and obsolete plants above all should be eliminated. Moreover, the construction of the following should be done; e.g.; installations to limit fluoride emissions from GZNF (200 million zlotys) and to prevent seepage of sulfur (50 million zlotys) and apatite during loading in Gdansk port.

Considerably more costly will be investments associated with the elimination of industrial and municipal waste. The solution to the problem of phosphorus and gypsum will cost approximately 1 billion zlotys. The cost of constructing a waste-storage area for EC-III at Gdynia will be 1.3 billion zlotys and for EC-II almost 400 million zlotys. A refuse burner would cost 300 million zlotys.

In other words, in order to make up for many years of neglect and merely to contain the process of annihilation of the natural environment along the Baltic coast, it will be necessary in the next 10 years to perform work valued at 20 billion zlotys. Absolutely essential is the allocation "for yesterday" of 2 billion zlotys, in order to complete the waste treatment plants East and Debogora and to build Swarzewo. In the meantime, the province has obtained tens of millions of zlotys for that purpose, but it lacks laborers and materials....

Consequently, fatal errors in investment planning and distribution of means for individual tasks are haunting us with a vengeance. We have built new smelters, ports, refineries and works, and we have restored castles, cutting off at the same time the branch upon which the biological protection of our inhabitants was hanging. Now we are too poor suddenly to allocate tens of billions of zlotys to environmental protection. The entire tragic aspect of this situation, however, lies in the fact that ways must be found to bring the country out of this crisis so as to endure the worst in possibly the best condition.

Therefore, investment associated with protection of the natural environment should be found at the very top of tasks which we must perform in the near future. I dare say that environmental protection should be given the same priority as food distribution and apartment construction. I also am convinced that all persons and offices responsible for the future of the Baltic coast and the country share this view.

Ecological Threat on Gdansk Coast

Lodz GLOS ROBOTNICZY in Polish 7 May 81 pp 1, 4

[Text] The number of seaside areas where swimming is not restricted is dwindling systematically. The closing of more beaches should be expected.

These include, among others, the less polluted fragments of Gdansk Bay and the Tri-Cities' beaches at Jelitkowo, Stogi and Sopot. Regular tests of the purity of sea water conducted by sanitary and epidemiological authorities are more and more disturbing. These include the swimming areas at Orlowo, Sopot, Jelitkowo and Brzezno. Disqualified are swimming areas on Sobieszewski Island. It should be counted on that the beach at Jelitkowo will be closed to swimming.

Such is the high price the inhabitants of the Tri-Cities are paying for industrialization of the urban agglomeration; e.g., Siarkopol, Fosfory, Rafineria and North Port, all of which have been built in recent years. Every year more sewage is poured into Gdansk Bay. The East waste-treatment plant was adjusted to process 90,000 cubic meters of sewage per day. In the meantime, over 130,000 cubic meters go into the bay. Every plant breakdown threatens the incalculable consequences and the irreversible results of an ecological disaster. These facts have been known for many years. Scientists and specialists from the Voivodship Sanitary-Epidemiological Station in Gdansk have spoken for years about the threat to the natural environment along the Baltic coast. An example of the advancing ecological threat in particular is Puck Bay, which has become a sewage reservoir. A bacteriological and epidemiological threat exists in the bay's entire area. There is no way that swimming or water sports can take place in the bay.

The situation has become alarming. If investments are not made, and quickly, to build waste-treatment plants, then the ecological threat will envelop further regions of Gdansk Bay, as well as the beaches on the amber coast up to Krynica Morska.

Recently, the sea waves threw dead eels for several days onto the beaches between Jelitkowo and Sopot. They were all ulcerated. It still has not been confirmed whether the cause was some fish disease or the toxicity of the waters in Gdansk Bay. The alarm continues on the beaches of the Gdansk coast, and in particular on those of the Tri-Cities and Puck Bay.

The Sanitary Inspector Warns

The provincial sanitary inspector in Gdansk has issued a warning as regards the purchase of raw or smoked eels at open-air markets and other haphazard places, resulting from the presence of bacterial diseases in the fish.

Ulcerating necrosis of skin and muscles, which was confirmed for the first time in the summer of last year and observed sporadically, has appeared more frequently this year. The sea throws onto the shore dead fish with deep wounds and cuts. Fishermen also catch sick eels. Unfortunately, the fishermen do not always bury or destroy them, as there are cases where the eels are sold at the fish markets. Infected eel meat can be harmful to people.

Observations and initial tests prove that the general cause of the widespread illness among eels is the increase of bacterial and chemical pollution in the waters of Gdansk Bay.

9807
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BACTERIA TO SEED CLOUDS UNDER STUDY

Jerusalem THE JERUSALEM POST in English 8 Jul 81 p 8

[Article by Galina Vromen]

[Text]

TEL AVIV. — Some newly discovered and yet unnamed bacteria found on citrus plants may provide a key to increasing rainfall, according to two Tel Aviv University scientists.

Freezing agents derived from bacteria could one day replace silver iodide as a common cloud seeding material, say microbiologist Saul Yankofsky and physicist Zev Levin, who have isolated bacteria with unusual freezing properties at the university's laboratories.

Although seeding clouds with silver iodide has helped increase rainfall in some parts of Israel by as much as 20 per cent, scientists have long argued that if they could find a better agent — one that caused ice crystals to form at higher temperatures — more rainfall could be wrung from clouds.

That agent, Yankofsky and Levin believe, could be bacteria like the ones they have isolated. The bacteria were discovered by accident when the two scientists tried to figure out why citrus fruits suffer from frost damage at temperatures just fractionally below freezing.

Something on the citrus leaf must allow ice crystals to form at unusually high temperatures to cause the frost damage, they reasoned. While that agent or bacteria might be harmful to citrus plants, it had potential as an ice forming agent in clouds to produce rain, the Tel Aviv University team realized.

"We took citrus leaves and deliberately froze them and found that different patches froze at different temperatures. We isolated the patches that froze at relatively high temperatures and obtained some yellow bacteria," Yankofsky explained in a recent interview.

The crucial function of cloud seeding is to provide a nucleus at a higher than natural temperature around which ice crystals form. Rain falls when a cloud becomes heavy with ice crystals. The average cloud — not seeded — needs to reach a temperature of about minus 15 degrees before ice crystals will form. Seeded with silver iodide, clouds can begin forming crystals at about minus 8 degrees.

But with the new bacteria, Yankofsky is finding that crystals begin forming at even higher temperatures of around minus 2 degrees.

"We are really in the early stages, still far from actually hiring planes and pilots and seeding clouds," said Yankofsky. "But the characteristics of these bacteria in the laboratory indicate that next to ice itself, they are one of the most efficient nucleators known."

High temperature bacterial nucleators may eventually prove less expensive, ecologically safer and more affective in producing rain than existing cloud seeding agents.

The major advantage of high-temperature nucleators lies in their ability to be effective on low-drifting clouds. Under Israel's winter conditions, unseeded clouds must usually have a top about two kilometres above the ground to reach temperatures cold enough to form ice crystals. That happens effectively about 15 times a year. With silver iodide, cloud tops need to be up only about half that height. But with the new bacterial agents, the plentiful winter clouds that drift only half a kilometre above the ground in Israel could one day produce more rain.

Bacterial nucleators are also likely to be less expensive than the precious silver iodide currently used. But any new agent will be cost-effective only if it succeeds in reducing the frequency of cloud-seeding flights, according to the Mekorot water company. "It is pilots, fuel and planes that make cloud seeding expensive — not the silver iodide," a Mekorot spokesman told *The Jerusalem Post*.

The unknown ecological effects of silver iodide have also stimulated research in alternative seeding material. While there is little clear evidence that silver iodide directly harms people, it is generally believed that heavy metals retard enzyme action in plants and animals.

But the new bacterial agents create their own ecological problems. Yankofsky is concerned about finding a substance that will kill off the bacteria after it is used. "We want to get the benefit of nucleation without the disadvantages of a potentially pathogenic organism. We must find safeguards to prevent it from harming frost-sensitive plants," he said.

The Tel Aviv team faces another major obstacle in developing the potential cloud-seeding material. They have found many of the isolated bacteria inactive. "We are trying to find ways to make more of the bacteria active and also to characterize the chemical action to eventually create artificial particles," he explained.

CSO: 5000/4722

DEADLINE ON BANNING DDT COULD BE FOUR YEARS

Concentration Could Be Halved

Salisbury THE HERALD in English 5 Aug 81 pp 9, 8

[Text] DDT may be banned in Zimbabwe in about four years, depending on research into alternatives and their effects, the chairman of the Natural Resources Board, Mr Lance Smith, says.

Answering questions at a meeting of the Wildlife Society of Zimbabwe in Salisbury on Monday, he said: "This is just a guess. I am not a scientist and I am just guessing from the various opinions of people concerned in this matter."

The level of use could be very much lower in about two years. Steps were being taken by various agencies with the backing of the board to reduce it.

The NRB had to take a balanced, practical view of the problem and of every other matter it considered, he said. Besides the environmental aspect the board was forced to consider the political and economic effect of its recommendations.

The NRB recognised the dangers of DDT and every effort was being made to eliminate the pesticide. Much progress had already been made. The environmental conservation committee had been re-established and research was being done.

Sharing the platform was Professor Geoffrey Bond, the board's vice-chairman and the chairman of the environmental conservation committee.

The committee, said Professor Bond, had three major terms of reference: to find the state of pollution in Zimbabwe, to make the public aware of the dangers and to look at the legislation on pollution control.

DDT was one of the problems being studied. It was used in three areas: agriculture, tsetse control and health.

"The use in agriculture can be diminished," he said. "Quite a lot of farmers are thinking very strongly and seriously on how to get rid of DDT from their operations." Only maize and cotton were now registered crops for DDT.

Tsetse had reclaimed areas it had been driven from because control operations had been limited during the liberation war and cattle returning to the newly affected areas would have problems.

"On health, there are a very large number of people who wouldn't survive the next rainy season if DDT or some other insecticide wasn't used." He said if DDT was banned in the world's malaria areas about one million people would die each year.

The pesticide problem was a regional one and information was difficult to obtain from some states although efforts were being made by several agencies in Zimbabwe.

He accepted fully the figures and results on DDT levels in birds of prey in Mr Ron Thomson's research. The survey had been scientific and accurate and although there was a high probability that the levels found in American birds would affect species in this country in the same way, there was as yet no complete proof.

Research was being done for a higher degree by a student at the University of Zimbabwe on the rate of breakdown of DDT into harmless products.

A doctor in the audience, asked by Mr Smith and Professor Bond to talk about the medical side of DDT research, said tests done in Zimbabwe showed average levels of DDT in fat and mothers' milk were around the levels of the highest figures recorded in the rest of the world.

They were also considerably higher than the safe maximums recommended by the World Health Organisation.

Intake levels of the poison were apparently 50 to 1 000 times as high as the WHO recommended safe limits.

Replying to a question, he agreed that tobacco was a greater risk than DDT but people had the option not to smoke — they could not choose whether DDT was in their environment or not.

Mr Smith, explaining part of a recent letter he wrote to the Herald, said that while use of DDT had declined in agriculture and tsetse operations had been reduced during the war, tsetse control was back in full swing.

But the Tsetse Control Department had agreed to halve the concentrations used in spraying operations.

'HERALD' Questions Use

Salisbury THE HERALD in English 5 Aug 81 p 8

[Editorial: "It's All Boloney"]

[Text] DESPITE massive evidence on the dangers of using DDT produced by an official of the Department of National Parks and Wild Life Management, the chairman of the Natural Resources Board, Mr Lance Smith, doesn't think time has come yet to ban the harmful chemical because there is no effective alternative.

The problem in the past has been that NRB has been an interested party in the DDT controversy. That is why it has taken a rather a lackadaisical approach.

A powerful farming lobby still favours DDT. The NRB must separate such sectional interests from the interests of all the people of the country. These demand the immediate banning of the chemical.

Mr Smith's arguments that DDT may be banned if suitable alternatives are found is all boloney. How it is that Europe and the United States can manage without it?

CSO: 5000/5045

NRB CHAIRMAN SAYS INDUSTRY AWARE OF POLLUTION DANGER

Salisbury THE HERALD in English 6 Aug 81 p 8

[Text] Zimbabwe has to learn from the mistakes of other countries and ensure air pollution never exceeds the present very low level, the vice-chairman of the Natural Resources Board, Professor Geoffrey Bond, has urged.

Speaking to the Wildlife Society of Zimbabwe this week, Professor Bond, who is also chairman of the board's environmental conservation committee, praised Zimbabwean industry for its attitude.

Prevention

"Management in this country, particularly in industry, is very much on our side. They know what a mess their predecessors have made in other countries. It costs money to clean up this mess and prevention is cheaper than cure."

Professor Bond said his committee had found a deep and realistic awareness on the problems of development and pollution.

He had been impressed on a recent trip to Redcliff to see how comparatively clean the Zisco steel works were.

The pink cloud at Zisco was mostly water vapour with a trace of sulphur and some suspended ferric oxide; this quickly settled out on soil already naturally rich in the mineral and so caused no problems. "I know that when wind blows the wrong way people in Redcliff do get pink sheets, though."

Zimbabwe did not have the acid rain which caused so many problems in Europe but could suffer from the global problems of rising carbon dioxide levels and the effects of aerosol sprays.

CSO: 5000/5045

POLLUTION PLAGUES KIRGHIZ SSR'S LAKE ISSYK-KUL'

Frunze SOVETSKAYA KIRGIZIYA in Russian 8 Jul 81 p 4

[Article by R. Belousova, head of the Administration to Regulate the Use of the Environment under the Kirgiz SSR Ministry of Land Reclamation and Water Management; S. Tokoldoshev, deputy head of the UGKS of the Kirgiz SSR; and L. Zholmukhamedova, correspondent of SOVETSKAYA KIRGIZIYA: "The Lake Should Be Clean (Return to the Subject of Why Pollution of Issyk-Kul' Continues"]

> [Text] The Issyk-Kul'skiy rayon has a significant number of holiday hotels, vacation homes and pioneer camps. Often the environmental protection measures for the entire resort zone of Issyk-Kul' are judged from this rayon. But unfortunately the surprise inspection brigade has had to state that the discharges of harmful substances into the natural environment of the Issyk-Kul' area that are associated with industrial and agrarian human activity are still great.

We turn from the road before Rybach'ye towards the barely marked construction site. Everything here is as if it was just started, but the project was set up back in 1965 and construction of the Rybach'ye treatment works was started in 1969. Then it was halted and started again. The excavators and tractors hummed. The last "beginning" was in 1978.

The Ministry of Communal Services (customer) and the Ministry of Construction (contractor) shared our concern. But in observing an unwritten tradition, they presented a mass of arguments justifying the construction delay. But are they justified? It is worth comparing the information of one ministry with the information of another in order to understand that the treatment works could have been built on schedule if the customer and the contractor had agreeed upon their forces and potentialities. What is the picture now? It was reported in the gorispolkom that 275,000 rubles have already been assimilated in this construction, although only 242,000 have been provided per year by the plan. At the same time, while the Ministry of Communal Services expected that these resources would be used to construct the treatment works proper, the Ministry of Construction "extended" a second collector branch. This lack of agreement generated poor management. Thus, the builders are waiting for equipment for the collector, but do not know when it will arrive. The Ministry of Communal Services, probably in accordance with its plans, brought expensive, imported and domestic treatment equipment here 3 years ago. It is rusting and going out of order because it was dumped straight on the ground. The disagreement in actions also resulted in the fact that the construction materials, lumber and precast reinforced concrete walls (one such slab weighs about 8 tons), were scattered all over the city. In order to ship them, transportation, people and time are needed.

We did not receive a distinct answer to the question of when the construction will finally begin in earnest.

By the way, 242,000 is a very small sum. This quantity of allocated funds is explained by the fact that in previous years the contractor did not assimilate a smaller sum. In a word, there is blatant inert compromise for every type of reason. And the danger of municipal wastewater entering the lake remains. An accident could happen at the pumping station, at the first collector branch. That is why no matter what the reason is for the delay in the start-up of the Rybach'ye treatment works, it cannot be tolerated.

It is now difficult to encounter leaders of farms and enterprises that would simply announce that they are indifferent to nature and its protection. On the contrary, they are always for nature. But if only there were more actions behind their words.

T. Anvarbekov, the director of the M. V. Frunze Sovkhoz, gave us a hostile reception. "Which of my farms is still close to the lake? They were resituated long ago." We had to take him to the section of Sary-Kamysh to show him only one (the others were vacated at the beginning of summer because the cattle were out to pasture) located impermissibly close to the lake. In the face of the obvious, the director again presented a mass of "justifying" reasons. Although we sympathize with him, he forgot about nature. However, this obstinancy was sad rather than funny. Anvarbekov confidently (although with a certain accurately rehearsed naivety) ended: "Let the building stand, it will fall down by itself. We will collect the dirt and trash. The fuel and lubricants spilled on the ground... So what? How will they enter the lake? You probably do not know that we almost never have rain." (By the way, returning from the surprise inspection, it did rain precisely on the territory of this sovkhoz).

We found out that this year the sovkhoz needed to build seven sheep pens, but has not found financing until now because, they say, the Gosplan is delaying the title lists. As proof that the sovkhoz was looking for solutions to the formed situation, a telegram to the oblispolkom was shown. No matter what happened, 6 months have already passed. When will they be built?

We were immediately told of a large number of telegrams and letters to different departments at the Rybach'ye meat-packing plant whose existing treatment works are overloaded and are operating in an unqualified manner. As a consequence, the sewer system often breaks. In addition, they say that they phone the Ministry of the Meat and Dairy Industry about this every day. Does not paper red tape too often replace actions?

The waste water of the meat-packing plant now enters a mechanical (already long obsolete) treatment link, then the filtering fields, although the territory that these fields occupies, as the workers of the meat-packing plant itself stress, should have been made into parks, beaches and plowed into gardens long ago. The meat-packing plant needs a pretreatment plant. Financing for its construction has been discovered this year, however, the workers of the mobile mechanized column of the Ministry of the Meat and Dairy Industry are not hurrying here. They are probably doing something more important. After pretreatment, the waste water of the meat-packing plant could be discharged into the general municipal sewage system. This would free land and the sewer pipes that do not withstand the pressure would stop breaking. But there is a persistent silence from the Ministry of the Meat and DairyIndustry. Perhaps it is true that they sincerely think that the mobile mechanized column is working indefatigably at the meat-packing plant facilities!

It should be said that the Ministry of the Meat and Dairy Industry sent an answer to the previous publication of the newspaper ("Around the Lake," SOVETSKAYA KIRGIZIYA, 9 June 1981). They said that "there is constant departmental monitoring of the operation of the treatment works located in the Issyk-Kul' zone." However, they did not mention the Rybach'ye meat-packing plant in the answer. In the opinion of the ministry, everything turned out well there.

We are travelling in a beautiful city which has become very green in recent years. Good! There is clean sea air, Issyk-Kul' is nearby. But what is this? There is a dirty puddle in the road. The pipe broke again and the waste water of the meat-packing plant splashed out onto the streets.

According to the data of the administration for hydrometeorology and environmental control, from systematic sample taking it is evident that the industrial enterprises, service stations, animal husbandry complexes are indirect polluters of the lake through underground water and surface effluent. In the region of Rybach'ye, for example, where the port, ship repair plant and meat-packing plant are located, an increased content of petroleum products, organic substances, copper, zinc and phenols is observed in the water as before.

In completing the surprise inspection of the Issyk-Kul' region, we decided to look into the third section of stud farm No. 54. Here we could only shrug. In the final analysis what is the point of inspecting the sanitary epidemiological station?! The farm buildings literally are buried in liquid manure, slowly, but steadily moving towards the lake. The workers "reassured" us. "It will dry up and we will collect it." We see around us enormous piles of many years of manure which undoubtedly represent a very dangerous source of lake pollution.

In the near future, a major scientific research vessel "Imeni 17th S'yezda Kompartii Kirgizii" will begin to cruise the lake area. It will be used to make detailed observations at any point of the lake in any weather. But we also need shore laboratories to observe the cleanliness of the air medium. Back in 1973, a decree of the republic government was adopted to assign buildings for hydrochemical laboratories, however Cholpon-Ate is clearly not hurrying to execute it.

The specialists of many professions are working on the problem of efficient zoning and the sanitary development of the Issyk-Kul' coast. However, as the surprise inspection showed, the problems of protecting the rare environment are often not solved because what is created by the scientific and engineering thinking is slowly assimilated and introduced into practice. These problems exist because of the indifference of certain officials and specific workers.

9035
CSO: 1800/613

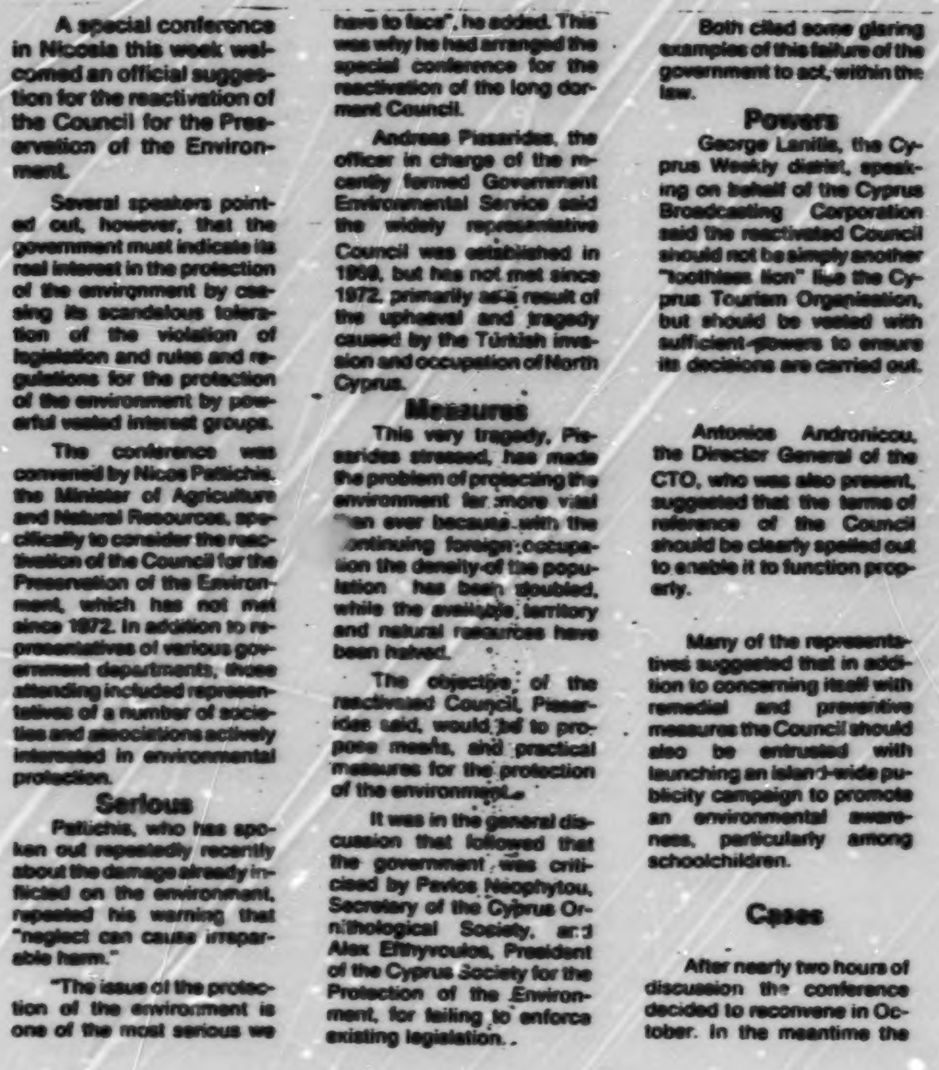
BRIEFS

DENMARK, FRG TOXIC WASTE PACT--Since the state of Hessen accepted the poison drums from Harboore, Denmark has offered to accept and treat organic solvents from Germany at Kommunekemi in Nyborg. Here one is at this time about to develop the activity for destruction of such waste to a capacity which corresponds to twice Denmark's total requirement. "It is a general consideration that each country should take care of its own industrial waste. But in Denmark we do not have the possibility for treating waste with high mercury content. We therefore made contact with the German authorities in Hessen, where the poison can be placed in mineshafts at a depth of 700 meters. In the letter to the German authorities we mentioned that we in that case could treat German waste of organic solvents. The answer was that they were happy about the offer but it was not of interest for the time being," director of Kommunekemi Willy Brauer tells BERLINGSKE. "Each year Germany accepts between 500 and 1000 tons of mercury waste from Denmark. But the waste from Cheminova and other activities had been so mixed up that a chemical reaction had taken place at the depot, and we were therefore unable to define accurately what there actually was besides the fact that we knew it had a high mercury content. This was the reason why we approached the Germans, who were willing to accept the 600 tons from Harboore in addition to the normal annual deliveries from Kommunekemi," says Willy Brauer. "The poison drums in Harboore will be sent off in the the immediate future. All formalities have been arranged. The poison has been filled into large plastic bags inside the drums, and these are equipped with clasp lids and have just been painted and are ready for transport," says Willy Brauer. [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 7 Jul 81 p 5 by Jens Thomsen] 8958

CSO: 500/2145

REACTIVATION OF ENVIRONMENTAL COUNCIL SUGGESTED

Nicosia THE CYPRUS WEEKLY in English 17-23 Jul; 81 p 4



[Text] A special conference in Nicosia this week welcomed an official suggestion for the reactivation of the Council for the Preservation of the Environment.

Several speakers pointed out, however, that the government must indicate its real interest in the protection of the environment by ceasing its scandalous toleration of the violation of legislation and rules and regulations for the protection of the environment by powerful vested interest groups.

The conference was convened by Nicos Patiichis, the Minister of Agriculture and Natural Resources, specifically to consider the reactivation of the Council for the Preservation of the Environment, which has not met since 1972. In addition to representatives of various government departments, those attending included representatives of a number of societies and associations actively interested in environmental protection.

Serious

Patiichis, who has spoken out repeatedly recently about the damage already inflicted on the environment, repeated his warning that "neglect can cause irreparable harm."

"The issue of the protection of the environment is one of the most serious we have to face", he added. This was why he had arranged the special conference for the reactivation of the long dormant Council.

Andreas Pissarides, the officer in charge of the recently formed Government Environmental Service said the widely representative Council was established in 1969, but has not met since 1972, primarily as a result of the upheaval and tragedy caused by the Turkish invasion and occupation of North Cyprus.

Measures

This very tragedy, Pissarides stressed, has made the problem of protecting the environment far more vital than ever because with the continuing foreign occupation the density of the population has been doubled, while the available territory and natural resources have been halved.

The objective of the reactivated Council, Pissarides said, would be to propose means, and practical measures for the protection of the environment.

It was in the general discussion that followed that the government was criticised by Pavlos Neophytou, Secretary of the Cyprus Ornithological Society, and Alex Efthyvoulos, President of the Cyprus Society for the Protection of the Environment, for failing to enforce existing legislation.

Both cited some glaring examples of this failure of the government to act, within the law.

Powers

George Lanitis, the Cyprus Weekly district, speaking on behalf of the Cyprus Broadcasting Corporation said the reactivated Council should not be simply another "toothless lion" like the Cyprus Tourism Organisation, but should be vested with sufficient powers to ensure its decisions are carried out.

Antonios Andronicou, the Director General of the CTO, who was also present, suggested that the terms of reference of the Council should be clearly spelled out to enable it to function properly.

Many of the representatives suggested that in addition to concerning itself with remedial and preventive measures the Council should also be entrusted with launching an island-wide publicity campaign to promote an environmental awareness, particularly among schoolchildren.

Cases

After nearly two hours of discussion the conference decided to reconvene in October. In the meantime the representatives present will submit suggestions on the terms of reference of the Council and the powers it should yield, so that these may be passed on to the Council of Ministers for consideration.

The President of the Society for the Protection of the Environment also suggested that the representatives should also list cases of the destruction, or threat, to the environment that need urgent remedial action, before the damage becomes irreparable. (Readers of the Cyprus Weekly aware of any such cases should write to the Society for the Protection of the Environment, P.O. Box 3810, Nicosia).

Summing up, Pattichis said he was glad to see the evident enthusiasm of those present and their determination to work "so that the evil that has happened and is continuing to happen will come to an end."

CSO: 5000/5547

ENVIRONMENT MINISTER SIGNS BILL TO AID GLASS RECYCLING

Copenhagen BERLINGSKE TIDENDE in Danish 10 Jul 81 pt III p 1

[Article by Erik Holst, minister of environment: "Environmental and Industrial Considerations in Balance"]

[Text] In Denmark we have had for generations a unique system for reuse of beer and soda-water bottles. This means, for example, that broken one-time bottles and empty beer cans do not lie about and litter the sides of the roads, the woods, and the beaches, as we can see them doing in other countries. The system is no less unique and highly regarded internationally because it functions so effectively: Over 98 percent of all bottles are returned by the consumers and used over 30 times.

Every Dane knows how the system works and uses it literally daily. But I wonder whether everybody also knows that the system is superior to all other packaging systems because it is more economical of resources, does not fill up the garbage cans, causes less pollution of the water and the air, and takes less energy.

The Danish return system has been exposed since the early 1970's to an increasing threat of collapse.

First came the threat from cans and one-time bottles. To meet that threat, in 1970 the Folketing passed a law on beer and soft-drink containers. That law was passed so that we could safeguard our reuse system. In the beer field it has not been necessary to resort to the law. We were in the gratifying situation here that all parties concerned-- brewers, retailers, and importers--were disposed to solve the problem themselves. That was done by an agreement to reduce the use of cans to nil by the end of 1981. Such an agreement could not be reached in the soda-water field. For that reason one-time packaging of soda water was prohibited in 1977.

Later we got more and more types of returnable bottles. That development was a threat to the system. If we get too many types of bottle, we cannot count on it that every dealer will accept return of all types.

To ensure that the Danish system of reuse of beer and soda-water bottles can continue, I have just signed a notice that signifies a prohibition of one-time packaging and a standardization of returnable bottles.

Before I signed the notice, I had a number of discussions with the EC commission. The subject was finding a balance between concern for the environment and concern for free trade.

In the notice I have just signed the balance is achieved.

During the negotiations with the commission we also discussed the complaint that the French firm of Perrier and the Danish importer addressed to the commission concerning the Danish regulations, which was reported in BERLINGSKE TIDENDE Tuesday 7 July 1981.

After these discussions the commission asked the firm to seek a solution to the question directly with the Danish authorities. I am convinced that if the firm applies to the Ministry of Environment it can find a reasonable solution together with the latter.

8815
CSO: 5000/2147

INDUSTRY COUNCIL PROTESTS PLANNED ENVIRONMENT LAW CHANGE

Copenhagen BERLINGSKE TIDENDE in Danish 10 Jul 81 pt III p 3

[Report by Jens Olaf Jersild based on interview with Elo Hartig]

[Text] The Ministry of Environment's proposal to revise the environmental protection law is encountering strong opposition on the part of the Industry Council, where the head of the council's environmental office, Elo Hartig, office head and civil engineer, says no to greater investments in improvement of the environment.

He interprets the ministry's proposal as a tightening up of the law and predicts that the new law will cost the firms customers and society a loss of jobs. That is due to environmental investments and the long delay in decisions on cases.

Unacceptable Bill

"It seems quite unacceptable to have a stricter law right at a time when many firms are in a tight economic situation.

"The firms have already made the most necessary investments, which have brought industrial pollution under control. We have reached a point where it quite simply is not reasonable to increase the investments," says Elo Hartig, who says that the proposed changes in the environmental protection law will lead to more litigation and consequently to longer delays in decisions.

Elo Hartig: "We are convinced that the number of cases will increase drastically when the new law is put into effect, because it opens up the possibility of letting 'professional environmentalists' act as plaintiffs in cases all over the country.

Environmental Cases in Spite of Happy Neighbors

"Today only the people who are neighbors and therefore directly affected by, e.g., expansion of a factory can go to the authorities and complain against the firm. According to the new law the nationwide environmental organizations can file a case against any firm in Denmark. Even if the firm's neighbors have nothing to complain about.

"We already have a flood of cases, the waiting time for a decision on which is typically a year, before the firm gets a green light to go ahead with, e.g., an expansion. Time after time we see the firms losing customers because they cannot increase production fast enough. And that means in turn that the firms must discontinue projects during the trial of the cases, because the customers have had enough. That means loss of jobs.

Faster Settlement

"The Industry Council has suggested that the firms be given permission to go ahead with an expansion if the commune administration in the first instance has given a green light. If a later decision by the environmental appeal board shows that there must be environmental improvements in the extension, the firm would of course have to pay. That way it would be possible to avoid the long-drawn-out trial of the case, which costs customers and jobs."

Instead, the Ministry of Environment in its proposal for revision of the law has opened up the possibility of the environmental administration's handling from the beginning and deciding the larger cases, which experience shows end up with the administration or the environmental appeal board under any circumstances.

Elo Hartig says that this proposal does not effectively attack the problem of the long waiting time, and that the new procedure will also adversely affect the communes' relations with the firms. For now some decisions come from central authorities without the local population's having had a chance to influence the decision.

Debating Club Instead of a Board

In addition, in Elo Hartig's opinion, the environmental appeal board is being converted from "a respected environmental court into a debating club." That is due to the fact that the bill gives nationwide environmentalist and consumer organizations such as the Sport Fishermen's Association, the Nature Conservation Association of Denmark, and the Consumer Council the chance to appoint experts who will assist the board in deciding on environmental cases.

"And these organizations have no knowledge of or practical experience with the problems connected with establishing a production plant. They are not professional organizations, but special interest organizations," says Elo Hartig.

In the near future the Industry Council's branch organizations will look more closely at the ministry's proposal for revision of the Environmental Protection Law. In the middle of August the Industry Council will meet with the Ministry of Environment to present the criticism of the bill officially. The bill is expected to be presented to the Folketing during July.

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CSO: 5000/2147

FIRMS CITE ENVIRONMENT LAW AS CAUSE FOR LEAVING COUNTRY

Copenhagen BERLINGSKE TIDENDE in Danish 14 Jul 81 pt III p 1

[Article by Jens Olaf Jersild]

[Text] Dim prospects of obtaining the necessary environment permits is the main reason that Lovens Kemiska Fabrik, a Danish pharmaceutical firm, has chosen to build a synthetic manufacturing plant in Ireland instead of in Denmark. Earlier, the firm waited more than 2 years for a decision on environmental factors.

"The manufacturing plant will be ready in 2 years. At that time, about 10 percent of the plant's total production in Ballerup will be transferred to Ireland. Furthermore, the production in Ireland will be expanded to include new penicillin products. The portion of the production that will be transferred presently employs about 40, but Lovens Kemiske Fabrik will try to maintain its present employment in Denmark by providing other jobs at the Ballerup plant," said director Helmuth Nielsen.

Industry Criticism

The announcement that Lovens Kemiske Fabrik will move part of its production to a new manufacturing plant presently under construction in Ireland due to Denmark's environmental demands came shortly after Industry Council representatives had criticized a new environmental law proposal. Industry feels that the new proposal is a further tightening of the law and could mean strict environmental demands and loss of jobs.

Director Helmuth Nielsen: "Lovens Kemiske Fabrik was faced with the situation of having to choose between constructing a pharmaceutical plant in Ireland or an additional plant in Ballerup near its present manufacturing plant. The new plant will manufacture nothing but penicillin products because American authorities require that the manufacture of penicillin and other pharmaceutical products be kept strictly separate. Otherwise, we will not be allowdd to export to the United States."

All the Same

"As far as we were concerned, it was all the same whether we built the new plant in Ireland or in Ballerup.

But, being given to understand by national and municipal authorities that it would be very difficult to obtain permits to construct a new pharmaceutical plant on our property in Ballerup, we chose Ireland. We have already secured the necessary permits to use new substances in our manufacturing process. In Denmark we would have had to apply each time we were to use a new substance," said director Helmuth Nielsen.

Waited 2 Years

"Lovens Kemiske Fabrik asked environment authorities some time ago for permission to construct another pharmaceutical plant in Ballerup. Following a decision by the Environment Board of Appeals, permission was granted after 2 years. But, by that time, economic conditions had changed so that we decided to wait and see. And now the permit has expired.

"The requirement by the United States authorities, which allegedly will be followed by several European countries, has forced Lovens Kemiske Fabrik to build a new pharmaceutical plant that will manufacture nothing but penicillin products. In this way we can keep other plants free of penicillin products and prevent penicillin from getting into other pharmaceutical goods.

"Lovens Kemiske Fabrik has operated a manufacturing plant in Ireland for the last 25 years and, in Denmark, we also have plants in Esbjerg and Vejen besides Ballerup."

Completed in 1983

"When the plant in Ireland is completed in 1983, it will be the only Lovens plant to manufacture penicillin products from the raw materials stage to a completely finished product. However, we will continue to operate pharmaceutical plants in Denmark that will produce raw materials for penicillin.

"The plant in Ireland can complete the manufacturing process of penicillin, but it will also be Lovens only pharmaceutical plant that can produce raw materials for new types of penicillin."

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CSO: 5000/2150

PARLIAMENTARY CONSENSUS ON ENVIRONMENT COLLAPSING

Copenhagen BERLINGSKE TIDENDE in Danish 14 Jul 81 pt III p 1

[Article by Rasmus Nielsen]

[Text] For the first time in the 8-year history of the environment law, the government cannot expect broad political support for its environment policy. Liberals and Conservatives strongly oppose Environment Minister Erik Holst's proposal to allow certain national organizations to file grievances in connection with important environment cases--even if local residents or politicians have no complaints.

"The proposal is a direct plot against municipal autonomy, which cannot be in accordance with the parliamentary majority's desire for local autonomy," said Ole Bernt Henriksen, a Conservative member of the parliamentary Environment Committee. "Grievances by national environment organizations will be a completely new and disturbing element in the local decision process," he continued. Ole Bernt Henriksen is disappointed about the fact that Conservatives have not been asked to participate in the efforts to revise the environment law even though the party helped pass the original law in 1973.

Hans Jorgen Holm, Liberal Party, feels that the proposal for greater right to file grievances will dilute local authorities' political responsibility. "The greater the opportunity to file a grievance, the more difficult for authorities to maintain a grip on their administrative responsibilities. We must have confidence that local administrators themselves will supervise the enforcement of the environment law."

The Liberal (V) and Conservative (K) parties also oppose the environment minister's proposal to expand the highest court of appeals, the Environment Board of Appeals, with representatives from the labor movement's Trade Council as well as representatives from consumer and environment organizations.

"But if national organizations obtain the right to file grievance, representatives from the two big nonsocialist parties want to introduce an obligatory deposit that will cover the costs if a case is lost. In this way," according to Ole Bernt Henriksen, "we can prevent organizations from filing fallacious grievances for public relations reasons alone." He pointed out that individuals will, of course, still have the opportunity to file local grievances without cost under any circumstance.

Earlier in BERLINGSKE, the Council of Industry stressed the danger that an increase in the number of grievances could cost jobs. Birgith Mogensen, Democratic Center Party, agrees with that:

"The proposed expanded right to file grievances could be most threatening to jobs. It should be sufficient that these organizations are represented on the Environment Board of Appeals."

Svend Taanqvist, Social Democratic Party, did not deny that the environment minister's new proposal could cost jobs, but said that the Social Democrats in Parliament had weighed environment concerns against employment. Personally, he figured there will be much support for the effort to further prioritize environmental concerns.

8952
CSO: 5000/2150

BRIEFS

WASTE USE--In the proposal for revision of the environmental legislation which now has been sent to organizations and authorities for a hearing, an effort is made to give the Environmental Administration more authority as compared to the municipalities with respect to the waste planning and recycling of waste. From the Environmental Administration it has been reported that today they are not always ready to guarantee the most advantageous removal of waste. Recycling on a greater extent is desired because even if recycling projects seldom are profitable for the private economy, they should be socioeconomically advantageous, according to the report. Recycling can in many cases be extremely reasonable. It is also correct that one could readily imagine dividing the alliance with that type of projects, which makes them socially profitable in spite of a failing profitability for the private economy. Before a decision is made to use resources for activities of that type, it is, however, necessary to set up a foundation for decisions which can clearly demonstrate the social profitability. It is not sufficient to limit oneself to build on the concept that recycling is inherently conceived of as a positively loaded concept, and that there therefore most certainly are large advantages beyond the possible advantages to the private economy in such an activity. So far the environmental authorities have not quite succeeded in showing the clear social advantages in new, systematic recycling projects. The attempts at this which were made, for instance, in connection with considerations of a recycled newsprint fabrication were not convincing from a social point of view. It is therefore not satisfactory either if plans are made with a new environmental legislation for increased state control with the municipalities in the waste area--which can inherently become a big burden for these--unless the Environmental Administration is able to show that the projects will become socially reasonable. In that respect it would not be sufficient that one hopes for a reasonable profitability some time in the future. Many other places in the public sector there are products which can exhibit a reasonable social profitability. All these activities must again be considered in view of a large investment requirement in the private economy, which should serve to improve the competitive position, help the balance of payments and thus create increased employment on a tenable economic foundation. Recycling projects must in the end also be evaluated on that background. [Text][Copenhagen BERLINGSKE TIDENDE in Danish 7 Jul 81 p 6] 8958

CSO: 5000/2145

HAZARDOUS WASTE PENALTIES URGED--The penalties should be stiffened for the firms that do not dispose of their wastes dangerous to the environment in a responsible way. So says Mayor Orla Syllested, of Aarhus, chairman of Commune Chemistry. "If a firm is exposed today, the penalty is not in a reasonable relation to the damage it causes by not obeying the law on the obligation to dispose of wastes dangerous to the environment," the mayor says. [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 10 Jul 81 p 3] 8815

CSO: 5000/2147

HIGH-SULPHUR COAL USED AT GARDANNE: ECONOMY, ECOLOGY CONFLICT

Paris LE MONDE in French 16 Jul 81 p 28

[Article by Jean Contrucci: "New Conflict Between Ecology and Economy: The Gardanne Plant Will Release 538 Tons of Sulphur per Day Into the Atmosphere"]

[Text] In its time, the project had been hailed with victory bulletins. While it had been thought to be slowly dying the Provence Coal Company at Gardanne (Bouches-du-Rhone), whose production of 1.6 million tons of coal per year is used at 80 percent in the power plant located on-site, received an unhoped-for boost: In January, 1980, the government authorized the French National Coal Board to implement the "Large Provence Complex." It was intended to work a lignite deposit discovered in 1975 and containing 56 million tons of coal which could be extracted at the rate of 1.6 million tons per year, thus insuring the availability of 2,000 jobs for thirty years.

But considering its sulphur content (4 to 6 percent), the Gardanne coal can only be used in thermal power plants. This is what was being done until recently using 4 furnaces feeding electric generators. The second phase of the "Large Provence Complex" included construction of a new 600 Megawatt power plant designated as "Group 5." Start-up was planned for 1984. The total investment was projected to be 2.5 billion francs, 500 million of which were for the mining facility alone. Work got underway.

But details of the project, and particular the environmental impact assessment, became better known, associations for the preservation of the environment began worrying. Basically, Groups 4 and 5 will eject 538 tons of sulphur dioxide a day into the atmosphere, since no de-sulphuration process has been planned. This figure is roughly equivalent to the cumulated total of rejects from all the industries in the Fos-Etang-de-Berre area (550 tons per day).

A 300-Meter Smokestack

The Department of Mines has decreed that the Provence Coal Company must erect a 300-meter smokestack, with a 30-meter diameter at the base, and a 9-meter diameter at the top. Sulphur-bearing waste will therefore be ejected above the temperature-inversion layer which maintains pollution at ground level, especially in calm weather in the winter. "This smokestack, which is as high as the Eiffel Tower, will constitute an esthetic aggression to the Aix area" observed Mrs Nicole Teboul, President of the Aix Committee of the Regional Union for the Preservation of Nature and the Environment. "The reason it reaches such dimensions is that no de-sulphuration process has been planned. This creates a double danger: esthetically, and for people's health. Aside from this, the usefulness of the project is not being contested, since 2,000 jobs for workers in the Arc valley depend upon it. We are asking that a de-sulphuration process be studied and implemented."

"The Provence Coal Company is conscious of the problem" is the answer from Company Headquarters at Gardanne. The new plant will be equipped with a 99 percent efficient dust-removal system, and it is dust which catalyzes the SO2. Smoke emissions will take place at a height such that they will be diluted. "The SO2 concentration," claim engineers, "is less than .2 parts per thousand and dangerous levels will not be reached." They add that "In case this is not sufficient, we are integrated within the Fos emergency network, and if necessary, we can reduce or even stop operation, since the plant is planned as a support plant only."

The Japanese and American Examples

Those responsible for the project claim that the two existing de-sulphuration processes used abroad, and in particular in Japan, have been studied. The first one would increase the cost by 400 million francs, and the second one/by 520 million, plus an additional 4 to 6 percent increase in operating costs. The company management claims that their efficiency has only been proven in the case of coal containing up to 1 percent sulphur. Today, there is no known process usable for coal with 4 to 5 times higher sulphur content. In addition, 4 years would be required for the installations to become fully efficient, whereas start-up is planned within 2 years.

Associations for environmental protection have not been convinced by these arguments and they have multiplied petitions, meetings, and operations intended to sensitize elected officials to the problem. They point to successful experiments, particularly in the United States where de-sulphuration of coal with 50 to 80 percent sulphur content has been achieved. The associations cite the work of Mrs Alix Audurier-Cros, a giographer with a doctorate in industrial installations who has performed an in-depth examination of the environmental impact study from the meteorological, climatic, and geographic standpoints. Her conclusions condemn the project as presently planned.

While agreeing that a reduction in sulphur emission would mean an increase of 5 percent in the operating cost per kilowatt-hour, Mrs Audurier-Cros claims, with proof to back her up, that in winter the stack will frequently be under the temperature inversion layer. She also fears the possibility that the emission of SO2 in the proximity of an atmospheric cooland producing important quantities of water vapor may generate sulphuric acid aerosols. She therefore requests additonal studies and a reinforced watch on the site and the neighboring area.

Association leaders denounce the atmospheric dilution process as resulting in the dispersion of pollution over a much larger area and defeating the efforts made by businessmen in the Fos area to reduce their levels of emission of toxic products.

These arguments have been successful. The local elected officials are now worried about the consequences of this project. Mr Christian de Barbarin, socialist mayor of Vauvenargues and president of the Union of Mayors of the Bouches-du-Rhone area called a meeting of the local officials involved on July 15. Mr de Barbarin stated: "I would like to create a commission of experts in order to obtain as accurate a view as possible on this whole question. If this would require additional governmental expenses, we should know about it as soon as possible."

The Gardanne Municipal Council is requesting the study of a de-sulphuration process which would allow the project to go on while protecting people's health.

6445
CSO: 5000/2155

ENVIRONEMENTAL QUALITY REPORTED WORSENING, HARSHER LAWS SOUGHT

Rotterdam NRC HANDELSBLAD in Dutch 2 Jul 81 p 2

[Text] Utrect 2 July—The past two years saw some progress in environmental legislation, but the condition of the environment in the Netherlands is worsening.

Such is the conclusion of the Nature and Environment Foundation based on its report over 1979 and 1980. According to the foundation only harsher environmental legislation can lead to real improvement in the years to come.

Nature and Environment finds that the prosecution of environmental offences is badly neglected. It is usually to prosecute old offences because they become barred by the statutes of limitations and new offences are also hardly ever dealt with.

Yesterday, at the presentation of the report in Utrecht, General President P. Nijhoff stated that the environmental movement has completed the phase of "frustrating rear-guard skirmishes." It is now a vanguard on its way to a future with a friendlier environment.

Its tactics should shift from defense to offense, which means that it should not confine itself to "putting out fires" but stimulate the development of, for instance, alternate sources of energy, different means of transportation, and other means of agriculture.

Automobile Lobby

Nijhoff said: "We are always fighting established interests." As examples he named the "automobile lobby," organized agricultural interests, industry, and, to some extent, also the civil service.

Among other things he had the report on reindustrialization of the Wagner Committee in mind when he said: "From all kinds of directions we hear complaints that the environmental policies, as conceived by Minister Ginjaar, are too ambitious. They have been put down and criticized as expensive frills which had better be eliminated. The labor movement has now joined the chorus. But we say: "Those policies were emphatically called for by the Second Chamber."

He called the Vonhoff Committee's suggestion (departmental reorganization to take environmental hygiene away from the Ministry of Public Health and make it a part of the Ministry of Environmental Development questionable and obsolete. The Nature

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Worldwide Report

ENVIRONMENTAL QUALITY

No. 321

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WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

No. 321

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EEC DECISION ON POLLUTION OF MEDITERRANEAN

Rome RASSEGNA PETROLIFERA in Italian 3 Jul 81 pp 559-561

> [Text] We are herewith reporting the 19 May 1981 decision of the Council regarding the conclusion of the protocol pertaining to collaboration in the fight against the pollution of the Mediterranean Sea caused by hydrocarbons and other harmful substances in case of critical situations.

The Council of European Communities

Whereas the treaty establishing the EEC, in particular, Article 235,

Whereas the proposal of the Commission,

Whereas the advice of the European Parliament,

Whereas, during the 7 and 8 April 1978 session in Copenhagen, the European Council held that the Community should engage in preventive action and in the fight against marine pollution, in particular the pollution due to hydrocarbons, an important objective of its action, and whereas it invited the Council, on proposal of the Commission, and the member states without further delay, with the Community, to take appropriate measures and, in the competent international agencies, to assume a common attitude regarding in particular the research on and implementation of effective measures to fight against pollution;

Whereas the action programs of the European Community in environmental matters, designed to underline the importance, to the Community, of the fight against marine pollution in general, among other things calling for actions by the Community to fight against pollution due to transportation and navigation, noting that the protection of marine waters for the purpose of assuring the maintenance of vital ecological balances constitutes a priority task;

Whereas the 16 February 1976 Barcelona Convention for the protection of the Mediterranean Sea from pollution, in particular called for the adoption of appropriate measures to guarantee cooperation in the fight against pollution in that sea stemming from hydrocarbons and other harmful substances in case of critical situations;

Whereas Article 24 of the Barcelona Convention provides that the latter and the protocols pertaining to it may be signed by the EEC which has already concluded the Convention and the protocol on the prevention of pollution of the Mediterrean Sea due to the discharge of waste from naval vessels and aircraft;

Whereas the protocol relative to collaboration in the matter of the fight against pollution in the Mediterranean Sea, caused by hydrocarbons and other harmful substances in case of critical situations, calls for collaboration of the parties in the drafting of emergency plans, in the promotion of measures for the fight against marine pollution due to hydrocarbons, the dissemination of information concerning the organization of means and new methods of prevention and fight against pollution, as well as the development of research programs in this field;

Whereas the adoption of the Community of the protocol in accordance with Article 26 of the Barcelona Convention makes it necessary, in order to achieve, within the operation of the Common Market, one of the purposes of the Community in the field of environmental protection and the quality of life and whereas the action authority for this purpose has not been provided for in the treaty;

Whereas it is necessary for the Community to adhere to said protocol for the purpose of taking part in the exchange of information and joint research and thus to pursue the above-mentioned objective, side by side with the member states and without regard as to the role which they have played so far within the context of the Barcelona Convention, and further, that this does not in any way prejudice the future actions of the Community;

Whereas said protocol provides for an exchange of information, a common research effort, and cooperation on the sea, activities which by virtue of their nature do not constitute common rules capable of being influenced by the accords which the member states might wish to conclude in this sector;

Resolved:

Article 1. In the name of the EEC, there is hereby approved the protocol relative to collaboration in the matter of the fight against pollution of the Mediterranean Sea, caused by hydrocarbons and other harmful substances in case of critical situations.

Article 2. The Chairman of the Council shall file the membership instrument provided for by Article 26 of the Barcelona Convention.

The text of the protocol is attached to this decision.

Protocol relative to collaboration in the matter of the fight against pollution in the Mediterranean Sea caused by hydrocarbons and other harmful substances in case of critical situations.

The contracting parties to this protocol,

Inasmuch as they are contracting parties to the Convention for the Protection of the Mediterranean Sea against Pollution,

Recognizing that serious pollution of the waters of the zone of the Mediterranean Sea, caused by hydrocarbons and other harmful substances, can constitute a threat to the riverine states and to the marine ecosystems;

Whereas the fight against this type of pollution calls for the cooperation of all riparian states along the Mediterranean Sea;

Keeping in mind the 1973 International Convention for the Prevention of Pollution Caused by Ships, the 1969 International Convention on Action on the High Seas, in case of a disaster which might cause or could cause pollution due to hydrocarbons, as well as the 1973 Protocol Regarding Action on the High Seas in case of pollution due to substances different from hydrocarbons,

Furthermore keeping in mind the 1969 International Convention on Civil Liability for Damage Caused by Pollution from Hydrocarbons,

Hereby has agreed upon the following:

Article 1. The contracting parties to this protocol (hereafter called "the parties") cooperate to take the steps necessary in case the presence of noteworthy quantities of hydrocarbons or other harmful substances, coming from disasters or resulting from a cumulative effect, which pollute or involve the risk of polluting the waters of the zone defined in Article 1 of the Convention for Protection of the Mediterranean Sea from pollition (hereafter called "the Convention") constitutes a serious and imminent threat to the marine environment, the coastline, or the related interests of one or more parties.

Article 2. For the purpose of this protocol, the expression "connected interests" [related interests] shall mean the interests of a riparian state directly hit or threatened, referring among other things to the following:

(a) Coastal, port, or estuary maritime activities, including fishing activities;

(b) Historical or tourist attractions, including water sports and other recreation activities of the region in question;

(c) The health of the population living in coastal areas;

(d) The conservation of biological resources.

Article 3. The parties pledge to maintain and promote, individually or in bilateral or multilateral cooperation, the emergency plans and the resources for fighting against marine pollution caused by hydrocarbons and other harmful substances. These means include in particular the equipment, ships, aircraft, and personnel necessary for operations in case of critical situations.

Article 4. The parties, individually or in bilateral or multilateral cooperation, shall arrange and activate effective surveillance of the zone of the Mediterranean Sea for the purpose of obtaining as precise knowledge as possible on the facts spelled out in Article 1 of this protocol.

Article 5. When harmful substances are dumped or have fallen into the sea in packages, containers, mobile tanks, tank trucks, or tank cars, the parties pledge to cooperate to the extent possible in their salvage and their recovery, so as to reduce the risks of marine environmental pollution.

Article 6. 1. Each party pledges to transmit to the other parties information concerning the following:

(a) The national organization or the national authorities competent in conducting the fight against marine pollution caused by hydrocarbons and other harmful substances;

(b) The competent national authority charged with receiving information concerning marine pollution caused by hydrocarbons and other harmful substances and concerning themselves with assistance between the parties;

(c) New methods of preventing marine pollution caused [illegible] hydrocarbons and other harmful substances, new procedures for fighting pollut[illegible], the development of research programs in this field.

2. The parties, who might possibly have agreed to exchange such information directly, however must communicate that information to the regional center. The latter shall take steps to communicate the information to the other parties and, assuming reciprocity, to the riparian states of the zone of the Mediterranean Sea which are not contracting parties to this protocol.

Article 7. The parties pledge to coordinate the utilization of communications media which they have in order, with the necessary reliability and speed, to guarantee the reception, transmission, and dissemination of every urgent report or information item on the facts and situations spelled out in Article 1. The regional center shall be equipped with the communications media necessary for participating in this coordinated effort and in particular to perform the functions assigned to it under the provisions of Paragraph 2, Article 10.

Article 8. 1. Each party shall see to it that instructions are issued to the captains of ships sailing under its flag and to the pilots of aircraft registered in its territory so that they would report to one of the parties or to the regional center, using the fastest and most appropriate means of communication, considering the circumstances, in conformity with Enclosure I of this protocol;

(a) Any disaster which has been or may be the cause of pollution of marine waters due to hydrocarbons and other harmful substances;

(b) The presence, the characteristics, and the extension of the slick of hydrocarbons or harmful substances spotted in the sea, constituting a serious and imminent threat to the marine environment, the coastline, or the connected [related] interests of one or more parties.

2. The information gathered in accordance with Paragraph 1 must be communicated to the other parties who might be struck by pollution:

(a) By the party that has received the information, directly or preferably through the center or

(b) By the regional center.

In case of direct communication between the parties, the regional center shall be informed as to the steps taken by those same parties.

3. The application of the provisions of Paragraph 2 shall exempt the parties from the obligation mentioned in Article 9, Paragraph 2, of the Convention.

Article 9. 1. Each party that finds itself facing a situation of the kind defined in Article 1 of this protocol must:

(a) Proceed to the necessary evaluations of the nature and scope of the disaster or the situation that calls for emergency measures or, as the case may be, the type and the approximate quantity of hydrocarbons or other harmful substances, as well as the direction and speed of drift of the slicks;

(b) Take steps designed to eliminate or reduce the effects of pollution;

(c) Immediately, directly or through the regional center, inform the other parties as to such evaluation and any action undertaken or planned in the fight against pollution;

(d) Continue to observe the situation as long as possible and continue to report in accordance with the provisions of Article 8.

2. In case of action designed to fight pollution deriving from a vessel, it is necessary to take all possible measures to rescue the persons present on board and, to the extent possible, the salvation of the vessel itself. Each party that undertakes an action of this kind must inform the Intergovernmental Maritime Consultative Organization.

Article 10. 1. Each party that needs assistance for an operation in the fight against hydrocarbons or other harmful substances which pollute or threaten to pollute its coastline may directly or through the regional center mentioned in Article 6, above, request aid from the other parties and first of all from those parties who in turn might be struck by pollution. This aid can in particular include consultant services by experts and the supply or the making available of products, equipment, and nautical means. The parties called upon for aid will do everything possible to provide such aid.

2. Whenever the parties involved in the operation fail to agree on the methods in this fight, the regional center may, with their agreement coordinate the activities of the resources committed by them.

Article 11. The application of the provisions of Articles 6, 7, 8, 9, and 10 of this protocol, concerning the regional center, shall be extended, where advisable, to the subregional centers which may possibly be created, considering the objectives and the functions of same, as well as their relations with the regional center.

Article 12. The regular meetings of the parties to this protocol shall be held during the regular meetings of the contracting parties to the Convention, to be organized in accordance with Article 14 of that Convention. The parties to this protocol can also hold special meetings in accordance with Article 14 of the Convention.

2. The meetings of the parties to this protocol in particular have the purpose of:

(a) Supervising the application of this protocol and evaluating the effectiveness of the measures adopted and the advisability of taking further steps, in particular in the form of enclosures;

(b) Revising and amending, if necessary, any enclosure to this protocol;

(c) As needed, performing any other function by way of application of this protocol.

Article 13. 1. The provisions of the convention to any protocol apply to this protocol.

2. The internal regulations and the financial standards adopted in according with Article 18 of the Convention shall apply to this protocol except if the parties should agree otherwise.

Enclosure

Content of report to be prepared by way of implementation of Article 8 of this protocol.

1. Every report if possible shall generally contain the following:

(a) The identification of the pollution source (possibly the identity of the ship);

(b) The geographic location, the exact time, and date of the event or the observation;

(c) The state of the wind and the sea in the zone;

(d) Useful details on the condition of the vessel when the pollution comes from it.

2. Every report shall if possible in particular contain the following:

(a) Detailed information on the nature of harmful substances involved, including their precise technical name (the commercial name must not be used in place of the precise technical name);

(b) The exact or approximate quantity, the concentration, and the probable state of the harmful substances discharged or which might be discharged into the sea;

(c) The description of the packaging and the identifying markings, as the case may be;

(d) The name of the shipper, the addresse, or the manufacturer.

3. Each report shall clearly spell out, to the extent possible, whether the harmful substance dumped or which might be dumped is a hydrocarbon or a harmful substance in the liquid, solid, or gaseous state, and whether that substance was or is transported in bulk or in packages, in containers, in mobile tanks, in tank trucks, or in tank cars.

4. Each report must be completed, as the case may be, by the addition of any other information that might be useful and that might be requested by the addressees of the report or that might be considered appropriate by the party making out the report.

5. Every person mentioned in Article 8, Paragraph 1, of this protocol must:

(a) As soon as possible complete, as the case may be, the initial report with the information on the development of the situation;

(b) As soon as possible meet the requests for additional information from the countries stricken.

5058
CSO:5000/2157

NATIONAL TOXIC WASTE DISPOSAL PLAN UNDER STUDY

Perth THE WEST AUSTRALIAN in English 13 Jul 81 p 45

[Text] Australian environmental authorities are likely to require the supervised burning of thousands of litres of deadly industrial waste.

Pockets of polychlorinated biphenyls (PCBs) are stored around the country, awaiting a safe burning process after decades of use in industry.

The highly toxic oils are severe environmental and health hazards. Most reports on their destruction call for burning at more than 1300C.

The only destruction of PCBs in Australia is taking place in a small-scale operation in Perth in a specially built furnace supervised by the Public Health Department.

Canberra informants said last week that PCBs were likely to be included in a national disposal plan being drawn up for the disposal of hazardous wastes.

A consultant's report on the plan was being studied by the Australian Environmental Council, a forum of the Federal and State Environmental Ministers and representatives of New Zealand and Papua New Guinea.

Work was being done internationally on the chemical destruction of PCBs, but Australian authorities had no doubts about the effectiveness of incineration.

TESTS HELD

The informants said that tests had been conducted. The burns had given a 99.9 per cent or better destruction rate.

There had been plans in 1979 to bring to Australia the ship Vulcanus, which sailed from port to port collecting PCBs and other wastes and burning them while on the high seas.

But the ship had been committed elsewhere at the time and was recently sold by its Dutch owners to U.S. interests. There was no immediate likelihood of the ship or a replacement coming to Australia.

The informants said it was estimated that there were several hundred tonnes of PCBs awaiting destruction in Australia.

[In WA the State Energy Commission is storing about 3600 litres of the waste.]

The Canberra informants said that in an attempt to head off similar problems in future with the substances being used to replace PCBs, a study was being made to check their potential environmental and health effects.

Imports of PCBs to Australia were reduced to zero last year, they said, and the range of uses for the chemicals had been reduced.

CSO: 5000/7582

FARMERS, LIVESTOCKMEN RAP NSW FOR LAND 'GIVEAWAY'

Sydney THE SYDNEY MORNING HERALD in English 18 Jul 81 p 4

[Article by Peter Diegutis]

[Text] The Government of NSW has caved in to trendy city environmentalists by taking productive agricultural land for State national parks, according to the NSW Livestock and Grain Producers' Association.

More than 400 farmer delegates at the LGPA's annual conference in Sydney this week voted unanimously to condemn the Government's plans to convert freehold land to leasehold tenure and to expropriate coal and mineral rights.

They also demanded that there be no changes to current zoning regulations in rural areas under the Environmental Planning and Assessment Act.

Mr Wade Cox, of Khan Yunis, a 1,750 hectare property near Braidwood, said yesterday that the Government's plans threatened the freehold rights of thousands of NSW farmers.

He resigned from the Australian Labor Party on July 7 because, he said, of the principles involved. He believes the Government's action in taking control of rural land is a bigger issue than nationalisation of the banks in 1949.

The conversion of freehold land to leasehold was being made now by a number of means, in line with the ALP's rural land policy, said Mr Cox.

Promulgation of national parks was being developed as an emotional, vote-catching issue for the urban population by urban political groups--but city people were being deliberately misled.

Mr Cox, a former Army officer, said he was not an anti-conservationist and he believed there was a genuine need to declare national parks. However, the matter had got out of hand.

Mr Cox said the Government was using the ill-informed urban conservation lobby as a tool to implement its land tenure policy.

Eventually this would destroy the viability of agricultural production in NSW and ruin country ALP branches for a long time, he said.

Widespread leasehold tenure would remove the incentive for farmers to reinvest in their properties, and the potential for graft would be incredible, Mr Cox claimed.

Because of the widespread anger against it in rural areas, the policy would rebound against the government at the September elections, Mr Cox said.

The security of government-held marginal rural seats including Albury, Castlereagh, Clarence and Northern Tablelands could be threatened.

CSO: 5000/7582

BRIEFS

COASTAL BULLDOZING--Bulldozers will clear a large slice of scenic coastal heath land near Anglesea for grazing in six months, unless conservationists can raise about $100,000 to acquire the land. The Barrabool Shire Council voted on Wednesday to permit the land to be cleared for grazing, despite more than 50 objections from individuals, conservationists and Government departments. The decision allows a six-months reprieve before the permit comes into effect, so conservationists have the opportunity to intervene. The director of the Australian Conservation Foundation, Dr Mosley, said last night he was confident the necessary funds could be raised. Dr Mosley said the land, between Urquhart's Bluff and Aireys Inlet, was one of the finest pieces of coastal scenery in Victoria. It should be transferred to public ownership to protect it, he said. The secretary of the Anglesea and Aireys Inlet Society for Conservation of Flora and Fauna, Miss Mary White, said she was horrified at the council's decision. The 40-hectare lot was largely coastal heath, which was rare in Victoria and an important coastal habitat. She said the society would lodge its objection to the permit. A spokesman for the Minister for Conservation, Mr Houghton, said the grazing permit was acceptable to the Minister provided it conformed to guidelines by the Soil Conservation Authority. [Text] [Melbourne THE AGE in English 17 Jul 81 p 15]

MORETON MINING CLASH--The Brisbane City Council is gearing for a head-on clash with the State Government over the Moreton Island sand mining issue. This week the council will launch a publicity campaign calling on Brisbane people to oppose mining on Moreton. The council will plead that Moreton Island should stay in its natural state and will claim that only a unified protest from Brisbane citizens will save it from mining. The council's action comes only days after the issue of a glossy policy statement on Moreton Island by the State Government which promoted limited sand mining on the island. The Brisbane City Council's Labor administration, which has responsibility for Moreton Island, is opposed to any mining on the island. Already it has circulated antimining petitions around its libraries and ward offices. It has made petitions available for signature in its Ann Street Brisbane Administration Centre headquarters. A detailed investigation of Moreton resulted in the adoption of a management plan by the Brisbane City Council. Its main aims are to conserve in its natural state, the quality of its scenery and natural environment, and to enhance public enjoyment of it for recreation purposes. A council spokesman said Moreton Island represented the last significant wilderness area close to Brisbane--there was an acute deficiency of national parks within a 150-km radius of Brisbane. [By John Gardiner] [Excerpts] [Brisbane THE COURIER-MAIL in English 17 Jul 81 p 15]

CSO: 5000/7582

BRIEFS

CHITTAGONG COASTAL EROSION--Chittagong, July 14--Erosion along the coastal belt of Chittagong is continuing unabated. About 1300 acres of land have been eroded by sea wave and current along the coast of Kutubdia island Sandwip island Anowara thana port thana Doublemooring thana and Sitakund thana during the last two years. Erosion has further been intensified during the current rainy season. According to the engineers of the Coastal Embankment Project Sandwip is the worst erosion affected island of the district. About eight hundred acres of land, the northwest coast of the island, have been engulfed by sea water in the course of the last two years. About two hundred acres of land have also been eroded along the west coast of Kutubdia island during the same period affecting about 30[?] thousand people. About one hundred acres of land along the west coast of Anowara thana have also been engulfed by the water of the Bay of Bengal and the market dovashi has completely gone under water. [Text] [Dacca THE BANGLADESH OBSERVER in English 16 Jul 81 p 7]

5000/7059

POLLUTANTS DAMAGE MANGO PLANTS

Colombo THE CEYLON DAILY NEWS in English 5 Aug 81 p 8

[Text] NEW DELHI: Industrial air pollutants affect plants, particularly mango trees. considerably.

According to a University Grants Commission sponsored study conducted in Bombay for three years, the damage ranges from 20 to 30 per cent during early post-monsoon period to about 100 per cent behind a chemical factory situated in front of a hill range during summer.

The study, conducted by Dr. S. B. Chaphekar, Associate Professor of Ecology, Department of Botany, Institute of Science, Bombay, and two others, revealed that mango trees were consistently affected by the quality of air irrespective of the type of pollutants, i.e., auto-exhausts of road-sides or effluents from chemical factories or petroleum refineries.

According to the study, industries in greater Bombay region threw about 1,000 tonnes of pollutants per day into the atmosphere. Of these, 28.4 per cent is carbon monoxide, 34.4 per cent sulphur dioxide, and the rest is made up of particulartes, oxides of nitrogen and others.

On human beings, "the air pollutants" cause mainly respiratory irritation and in extreme cases serious lung congestion leading to death. Hydrogen fluoride causes respiratory diseases, fluorosis, teeth mottling and irritation, "Reduced visibility is also associated with air pollution".

Dr. Chapbekar and his associate investigators, Dr. D. B. Boralkar and Mr. R. P. Shetye, also conducted their research on other plants including thespesia (Bhendi), erythrina (Pangara) and polyalthia (asupala).

The maximum damage estimated on leaves of thespia in and around Bombay was 20 per cent. Compared to mango this plant appeared to be more resistant, with less than five per cent damage at most of the spots.

At one spot near a refinery, the damage though small was present throughout the year.

Amongst the plant species used for estimating the damage to foliage, only mango was consistently reliable, the study says. It showed high foliar damage in industrially polluted areas as well as along road-sides.

Hence it is concluded that only mango trees can prove a reliable and consistent air pollution monitoring instrument. (PTI).

CSO: 5000/4929

DESTRUCTION OF FORESTS CONTINUES: COUNTERMEASURES SUGGESTED

Vientiane SIANG PASASON in Lao 21 Apr 81 pp 1, 4

[Text] Our mountains and forests are abundant, beautiful, and rich treasuries of our country's natural resources. These resources, if we know how to protect and maintain them, can become the inexhaustible capital of our nation.

However, for many years our multi-ethnic people, particularly in mountainous areas, have practiced shifting agriculture and thus destroyed tens of thousands of hectares of forest every year. Moreover reactionaries in the old regime cut massive amounts of timber and sold it. Thus the area of our country covered by forests steadily decreased. After the liberation of our country, even though the party and government paid special attention to the control and preservation of forests, in some areas where it was necessary the burning or clearing of forests so our multi-ethnic people could practice agriculture still occurred, made the situation worse and had drastic environmental effects. For example it led to floods, droughts, and soil exhaustion and erosion in various localities which created major difficulties for our people to survive.

As a result the primary thing to decide in the effort to preserve our abundant national resources and to ward off droughts and floods successfully is that we must unanimously carryout the plans and policies of the party and state regarding preservation and control of forests. In particular we must use proper farming methods in accordance with scientific principles. For example we must reduce the area used in farming. If it is necessary [to cut forests for farm land] we must try to avoid areas with large, valuable trees and forest areas of strategic importance in protecting the natural environment, namely: reserve forests, mountain taps, headlands of streams and lakes, banks of streams, drainage ditches, and canals, and along roadsides.

Before new farm land is cultivated in any area a survey should be performed and a detailed plan drawn up fixing the forest boundaries two or three months in advance. One or two years would be even better. One thing to be avoided which our people have done previously is the leveling of a broad expanse of forest, either an entire mountain or dozens of hectares because if that is done there is nothing left to resist strong winds and rain which will lead to adverse effects on plantings and on the development of many kinds of wild trees. A better way is to preserve strips of forest to provide resistance to wind and rain.

Also, careful preparation before setting fire to a field means making sure that the fire will not spread to a forest by clearing a sufficiently broad area surrounding the field so that the fire cannot spread. Such fires should not be lighted on a windy day. Any former abandoned fields which cannot be used as fully or partially flooded paddy fields or as irrigated fields should be used to plant high value agricultural or industrial crops such as: maidu, maunhung, mai khamphi, mai khaew, mai tae, mai nbom, mai yaek, mai longleng and other types of plants which provide forest products. These plants must also be well cared for.

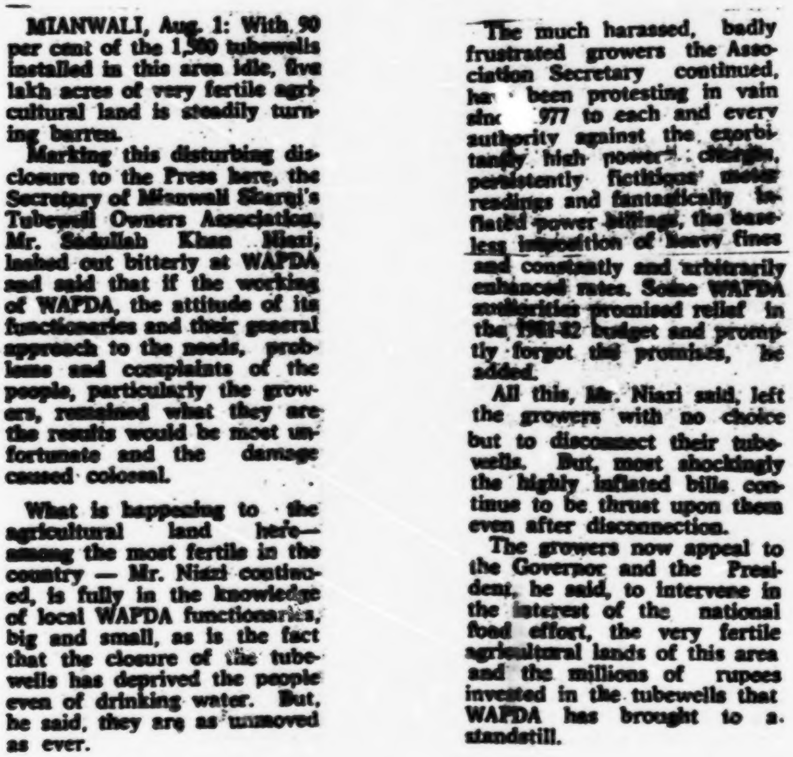
If these things are done we will be able to make our forestry resources greater, broader, and richer. Therefore, administrative authorities and leadership cadres at all levels, particularly cadres in mountainous regions or where plantation farming is common, should pay special attention to this effort and must divide up and delve deeply at this time because this is the time for clearing and burning fields. We must recognize that preserving and controlling our forests means preserving the party's policy and the future as well as our nation's capital. We must do everything we can to limit clearing of forests so that our nation will be one of green, fresh forests through the years which produce great revenue for the people now and in the future.

8947
CSO: 5000/4529

FIVE HUNDRED THOUSAND ACRES OF LAND STEADILY TURNING BARREN

Lahore THE PAKISTAN TIMES in English 2 Aug 81 p 6

[Text]



MIANWALI, Aug. 1: With 90 per cent of the 1,500 tubewells installed in this area idle, five lakh acres of very fertile agricultural land is steadily turning barren.

Marking this disturbing disclosure to the Press here, the Secretary of Mianwali Sharqi's Tubewell Owners Association, Mr. Sadullah Khan Niazi, lashed out bitterly at WAPDA and said that if the working of WAPDA, the attitude of its functionaries and their general approach to the needs, problems and complaints of the people, particularly the growers, remained what they are the results would be most unfortunate and the damage caused colossal.

What is happening to the agricultural land here—among the most fertile in the country — Mr. Niazi continued, is fully in the knowledge of local WAPDA functionaries, big and small, as is the fact that the closure of the tubewells has deprived the people even of drinking water. But, he said, they are as unmoved as ever.

The much harassed, badly frustrated growers the Association Secretary continued, ha[illegible] been protesting in vain sin[illegible]977 to each and every authority against the exorbitantly high power charges, persistently fictitious meter readings and fantastically inflated power billings, the baseless imposition of heavy fines and constantly and arbitrarily enhanced rates. Some WAPDA authorities promised relief in the 1981-82 budget and promptly forgot the promises, he added.

All this, Mr. Niazi said, left the growers with no choice but to disconnect their tubewells. But, most shockingly the highly inflated bills continue to be thrust upon them even after disconnection.

The growers now appeal to the Governor and the President, he said, to intervene in the interest of the national food effort, the very fertile agricultural lands of this area and the millions of rupees invested in the tubewells that WAPDA has brought to a standstill.

CSO: 5000/4534

COASTAL RESOURCES MUST BE MANAGED MORE CAREFULLY

Beijing DILI ZHISHI [GEOGRAPHICAL KNOWLEDGE] in Chinese No 5, May 1981 pp 3-4

[Article by Li Shanwei [2621 0810 3634]: "Our Coastal Resources"]

[Text] China is a maritime nation with extensive coastal areas and territorial seas, a long and tortuous coastline, and abundant resources. From the mouth of the Yaluhe in the north to the mouth of the Beilunhe in the south, the coastline is 32,000 km long (including island coastlines) and located in temperate, subtropical, and tropical zones. The people living in coastal areas have made their living from the sea for generations, and their bitter toil has built China's long coastal areas and territorial seas into an important base for agricultural and industrial production.

The seacoast is situated in an area of interaction between water, land, organisms, and atmosphere and complex natural factors, making coastal changes very clear and giving them a special character. Complex natural conditions make for a variety of coastal types. In terms of major types, China's coastline has a structural coastline, volcanic coastline, eroded coastline, accreted coastline, organic coastline, delta coastline, and manmade coastline. Included among this are the imposing harbor coastline, which is a model for the world; the mudflat coastline, which seems to go on for as far as the eye can see; the sand coastline, which consists of linked sand dunes; and the coral coastline, which is scenic and charming.

Utilization of the Coastline

Enclosing the beaches and mudflats for cultivation: China's beaches and mudflats have an area of about 20 million mu, over half of which, according to preliminary estimates, are capable of being reclaimed through enclosure. China has a long history of enclosing coastal beaches and mudflats for cultivation and, along with the development of production, the scale of this sort of land reclamation has grown larger. Zhejiang Province alone has created 1.66 million mu of land through reclamation in this way since liberation. On land that it has reclaimed through enclosure, Xiaoshan County has carried out a comprehensive program of agriculture, forestry, animal husbandry, sideline production, and fisheries, implemented agricultural mechanization, and drawn benefits from reclaiming land from the sea. In China's coastal beach and mudflat areas, a great number of farms have now been built for agriculture, salt, reeds, and fishing: for example, in the Huanghai seacoast and Panjin districts of Liaoning, in the Lutai district of Hebei, in the land reclamation area at the mouth of the Huanghe, in Shandong's Changwei Prefecture, and along the seacoasts of Fujian, Guangdong, and Guangxi. In some areas, because the water-conservancy facilities are very complete, saline soil has been improved, and much of it has been turned into desalinized paddy, creating an area of plenty in our aquatic regions.

Aquatic production, and fisheries resources: Many of China's coastal areas are famous fishing grounds which teem with famous sea slugs, prawns, and abalone and also have large quantities of cash fish and shellfish. As for plants, there are laver, agar, and kelp or algae which can be used as an industrial raw materials. Except for a few varieties which are found in certain specific coastal areas, the overwhelming majority are distributed rather broadly. Natural aquatic production resources are not unlimited, however, and with the development of fishing technology and the increase in the number of fishing boats, the catch has diminished; in particular, the reckless pursuit of norms has led to overfishing. The cash fish have disappeared, and to take their place the number of small miscellaneous fish caught has been increased to make up the quota.

On the other hand, the developmental situation in the production of plants in recent years in China has seen gradual increases in output, with varieties also becoming more diversified, especially in terms of China's production of kelp, laver, and mussels, which has climbed steadily from year to year. Thus, acceleration of the development of China's aquatic cultivation is not only completely necessary, but also possible. Apart from kelp, laver and mussels, other varieties are still rather limited in production. This is especially true for cash fish and prawns. Exceptions to this [limited] cultivation are Taiwan's zhumuyu [6686 4158 7625] (the area in cultivation is over 230,000 mu and output nearly 30,000 tons) and the African crucian carp, which is cultivated in several provinces in the south; both of these varieties are grown on a rather large scale.

Salt resources and reeds: Salt, known simply as "the mother of the chemical industry," has a long history of several thousand years of production through solar drying in coastal beaches and mudflats in China. Particularly in the north, which is well endowed by nature, the quality of salt produced is very high and the output is large. The salt from the Tanggu salt fields and the Caizhouwan salt fields is known both in China and abroad for its large crystals. Today, China's salt fields, both large and small, are widely scattered in all coastal areas.

The growing of reeds in coastal areas has a very short history in China. In Liaoning's Yingkou district, an area of 500,000-600,000 mu has been opened up for growing reeds. The entire reed is valuable, for it is a high-quality raw material for the making of paper. Initial output of paddy rice planted in newly reclaimed coastal areas is not high, but planting reeds produces a high output and a quick harvest; furthermore, it helps desalinize the soil and improves the physical and chemical nature of the soil. So on China's northern beaches, planting paddy rice after harvesting reeds has been a good experience.

Estuarine harbors, and utilization of tidal energy: China has a great many estuarine harbors with many uses, the most important of which is their development as ports. Since antiquity, estuaries have been used by vessels. Long ago in the Tang Dynasty, Dengzhou (modern-day Penglai, in Shandong), Yangzhou, Quanzhou, and Guangzhou had already become famous ports. At that time, Penglai was the only port for crossing over to the east to Japan and Korea. By the Ming Dynasty, the first time Zheng Heqi sailed to the western oceans he set out from Liujiahe in Suzhou. The scale and tonnage [of the ships] at that time were considerable. Along with the development of sea communications, ship tonnage has increased, and now the largest oil tankers reach over 500,000 tons. Increases in tonnage should be matched by deepwater harbors. China does not have many deepwater harbors, and some harbors cannot meet the demand; this has an impact on the development of foreign trade. The expansion of existing ports and the development of new ports are urgent matters.

Elsewhere in the world, tidal energy is used mainly as motive power for generating tidal electric power. At present, France, the USSR, the United States, and other countries have already built their own tidal power stations, of which France's Langsi [2597 2448] tidal power station is the largest, with an annual output of 544 million kwh. There are abundant tidal energy resources on China's coast. According to statistics, the gross capacity is 2.75 billion kwh. In particular, the tides on the Zhejiang-Fujian coast are the strongest; a station built on the Qiantangjiang alone could generate 7 million watts. For a variety of reasons, China got started in tidal electric power rather late. It wasn't until 1958 that China began to build a small-scale tidal powerplant on the seacoast. The Baishakou tidal powerplant in Shandong formally began generating electricity in 1978 with an annual output of 2.3 million kwh. The construction of this station accumulated experience and created favorable conditions for construction of large-scale tidal power stations on China's seacoast.

Protection of the coast, and the importance of SPARTINA ANGLICA: In China's history there have been many achievements in protecting the coast, such as the Fanman embankment in northern Jiangsu and the seawalls of the south--particularly the seawall at the mouth of the Qiantangjiang--next only to the Great Wall and the Grand Canal in China's history. They are evidence of the transformation of nature through the struggle of China's laboring people with the sea. After liberation, this historically excellent tradition was continued as the people of Xiaoshan many times took land from the sea, creating fields by enclosing the sea, and in their struggle with the sea they created a complete set of effective methods. In building dikes, they both protected against waves and promoted silting, as well as increased the area of beaches and mudflats. Because the supply of silt was cut off after the Huanghe shifted its course southward in 1855, the coastline at the old mouth of the Huanghe in northern Jiangsu retreated through constant erosion, and villages along the coast were constantly moved inland. In the great tidal wave of 1939 in particular, over 10,000 persons were swept into the sea in a very tragic episode. After liberation, the party and government invested enormous sums for the building of dikes and seawalls, and now the coast is protected and the Sanhe brigade can live and work in peace.

Some sections of China's seacoast have sand dunes which are formed by the constant accumulation of sand. The movement of the sand dunes buries fields and villages and greatly endangers the area. After sand dune seacoasts were afforested by planting large numbers of trees, sand damage was overcome. The Chongshan tree farm in Caicheng, Shandong, was started on sand dunes which were a danger due to blowing sand. After 20 years of careful cultivation, a large sand beach which used to be billowing with yellow sand has become a luxuriant "green long wall" beside the sea.

In 1963 Professor Zhong Chongxin [0112 1504 0207] of Nanjing University successfully introduced SPARTINA ANGLICA from England, which has had important significance in transforming the seacoast and has been called the "poineer plant for opening up the beaches." Because of the superiority of SPARTINA ANGLICA, itself, after planting it can play a role in protecting the coast and promoting silting, particularly on infertile beaches not suited to cultivation. Systematic planting of SPARTINA ANGLICA will play an important role in recreating and protecting China's beaches and mudflat seacoast. SPARTINA A., which was first test-planted in the Qidong area of Jiangsu and the area of Wenling Zhejiang, is now "at home" from Xingcheng, Liaoning in the north to Guangdong in the south and covers an areas of over 300,000 mu.

Problems Which Have Emerged in Utilizing the Seacoast

Enclosing coastal beaches and mudflats for cultivation, and aquatic resources and cultivation: In enclosing beaches and flats for cultivation, many areas not only have enclosed barren beaches but also have shut out many beaches and flats which used to grow plants and were suited to cultivation. This has had serious consequences. On the beaches of Qidong and Rudong in Shandong, the clams and sijiaoge [0934 6037 5756] which used to be caught in great numbers every year are now nearly extinct due to changes in the biological environment. Or again, the lancelets, a special product of Amoy, dropped in output year by year after the Xinglinwan seawall and Jimeihe embankment were built, until they have now disappeared. The impact of land reclamation from the sea is greatest near the rivermouths. Due to environmental changes, fish and shellfish which used to come to such places to lay their eggs cannot lay eggs or have changed the place where they lay eggs. This is another reason why China's production of aquatic products has dropped sharply in recent years.

Land reclaimed from the sea, harbor communications, and utilization of tidal energy: This is most evident in China's historically famous Quanzhougang (a large and prosperous port during the Tang Dynasty]. In Guangdong's Shuidonggang and Changwengang, because silt could not move due to erosion that cut off the flow, and with the reclamation of land from the sea by enclosing it, in addition to the silting in the mouth of the bay caused by the tides, the harbor became shallow and was finally abandoned. After Niuzhongyang was reclaimed from the sea by enclosure, the channel to the sea from Shantougang gradually became shallow. The depth of the water in Qingdaogang also gradually became shallow due to the expansion of coastal saltfields on Jiaozhouwan. After frequent reclamation in Hangzhouwan, the area has contracted greatly and the famous Qiantangjiang tides are much inferior to what they were earlier. If things go on this way, before long the tidal bore will no longer exist.

Pollution: With the vigorous construction of water-conservancy projects and the rise of coastal industry everywhere, the volume of pure water flowing into the sea from the rivers has been diminished and the sources of pollution have increased commensurately. Factories discharge large quantities of harmful substances into the rivermouths and banks, thinking that they have found an "ideal" solution to waste and that all is well, but this is really a mistake. In recent years, pollution from the "three wastes" has become a serious threat to organisms along the seacoast and to people's lives. Especially, the effect of petroleum pollution on the environment of fisheries resources has been that some coastal economic fish and shellfish have clearly diminished in numbers. The little yellow croaker, hairtail, and red porgy for which Bohai is famous are nearly extinct. This has lowered their value as food and even made them poisonous.

Sand resources: Sand is valuable. In addition to supplying various kinds of sand to be used as building material, China's seacoasts also have pure white quartzite, which is the best material for the glass industry, and the heavy minerals rutile and zircon. Beach sand is mainly rocks which have been crushed and then transported and washed by years of wave action and finally piled on the shore. The [sand] no longer moves much and has achieved a dynamic equilibrium, and it plays a role in protecting the seashore. Taking large quantities of sand from the seashore will destroy the hydrodynamic and material balance of the seashore, especially in some areas of the shore where the supply of resources is sparse and the seashore has eroded. Some beaches in Shandong are retreating through erosion because too much sand has been removed from them.

In terms of resources, apart from large land area and fisheries resources, the large cities and famous harbors concentrated on China's seacoast also have inexhaustible seawater chemicals, tidal energy, and tourist resources, as well as important raw materials essential to industry such as mineral petroleum, grit, and placer deposits. Our forefathers began to develop and utilize China's coastal resources, such as "fishing and saltmaking," and had knowledge of tides and navigation earlier than did other countries. Now, in order to realize the four modernizations, communications sections want to build wharves on the seacoast; agriculture wants to reclaim sealand by enclosing it; salt farms want to expand their saltfields; aquatics products departments demand protection of fish spawning, reproduction, and resting; however, tourists and the people at large ardently demand that parks be built and that they have an unpolluted and clean seacoast environment. Proceeding from a single point of view and not considering things from the point of view of scientific and comprehensive utilization will necessarily cause problems, and some contradictions have indeed already become more intense. On the one hand, there is no overall planning that takes all factors into consideration as far as the seacoast is concerned, while on the other hand there is no thorough understanding of the natural laws and creation of the seacoast. To destroy natural laws and to think only of immediate advantage will not only make it impossible for us to derive benefits, but may even create irreparable damage which will leave a legacy of trouble for later generations.

8226
CSO: 5000/4087

BRIEFS

SERIOUS WATER POLLUTION--Pollution of rivers and soil by the 1,200 electro-plating plants on the island seriously threatens human health and crops, the Anti-Water Pollution Center of the Taiwan Provincial Government warned in a report recently. The report said waste water containing acids and alkali exuded by electro-plating plants, around Sanchung, Tai-[letters indistinct] ung, Changhua, Homei and Tainan, is harmful to aquatic life and humans who eat these fish. Furthermore, the heavy metal ions contained in the waste water accumulate in the human body, causing swelling of the skin, stomachaches, uremia, rickets, and sometimes even death. The report stressed that inorganic heavy metal ions in waste water are consumed by humans in the fish and other aquatic life, and causing indirect but severe harm to the human body. It urged the electro-plating plants to improve their treatment of waste water before dumping it in rivers. [Text] [Taipei THE CHINA POST in English 28 Jul 81 p 12]

AIR POLLUTION HARMS CROPS--Air pollution has caused a constant and serious threat to the production of vegetables and rice in Taoyuan, Miaoli and Kaohsiung counties, according to a report issued by the Council for Agricultural Planning and Development Tuesday. The report pointed out that due to serious air pollution in the past several years, the production of farm products has decreased; rice and vegetables are the most seriously affected crops. In 1978, 323 hectares of crops were victimized and in 1979, 668 hectares. At present, there is no appropriate law to help farmers claim compensation from polluters. The most a farmer can hope to achieve is a compromise with the polluting party. CAPD officials who worked on the survey report urged the government to seek ways to control air pollution and protect farmers. Health bureaus all over the island should each form a public nuisance prevention center to stop further victimization of farm products and public health, the officials suggested. [Text] [Taipei THE CHINA POST in English 5 Aug 81 p 12]

CSO: 5000/4928

WAYS TO SOLVE POLLUTION OF THAM LUONG RIVER DISCUSSED

Ho Chi Minh City TIN SANG in Vietnamese 10 Jun 81 p 1

[Article: "Meeting to Duscuss Measures to Solve Environmental Pollution of Tham Luong River"]

[Text] TIN SANG, 9 June--Many concrete measures aimed at effectively solving the present pollution of the Tham Luong River within the shortest time have been proposed following a conference organized in late May 1981 by the standing committee of the municipal people's committee to address that problem.

The conference unanimously agreed that pollution of the Tham Luong River has reached the alert level and has caused very serious damage to agriculture, livestock and poultry raising, fish, vegetables, and human health (in neighboring areas and even inside factories), causing great damage to agricultural production a bad impact on the worker-peasant alliance, etc.

In terms of branch management, the responsibility rests with ministries, general departments and bureaus in charge of enterprises and factories which caused pollution; however, in terms of territorial management, the local administration has the task and power to control, uncover and prosecute violations committed by whatever echelons.

As an immediate measure to solve pollution during this year's rainy season, the municipal people's committee has charged the standing office of the Council on Environmental Protection with the task of inspecting and discussing ways to dispose of waste water with factories along the Tham Luong Canal, especially the Vien Dong papermill and the Thanh Son insecticide factory. Factories and enterprises should take the most positive and urgent measures (at around mid June 1981) to protect the environment, thus avoiding a bad impact on agricultural production and the people's health.

A subcommittee to address the Tham Luong River pollution problem will be set up with the participation of related organs, sections, branches, localities, factories, etc. It will urgently complete the most proper plan for handling pollution of the Tham Luong River.

Moreover, the municipal science and technology committee should promptly submit initiatives on handling environmental pollution from all strata of the population to the municipal people's committee for consideration and commendation.

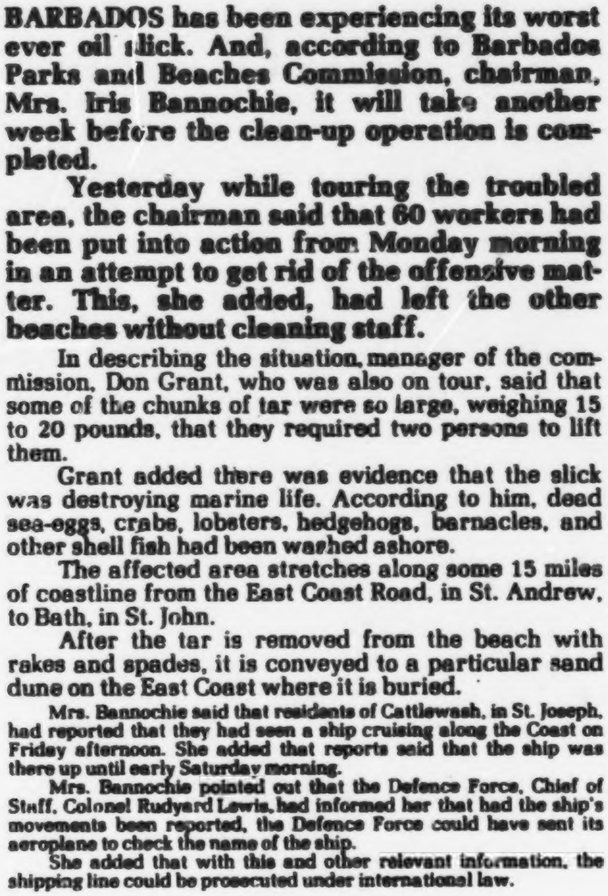
9213
CSO: 5000/4533

15 MILES OF COASTLINE HIT BY RECORD-BREAKING OIL SLICK

Bridgetown THE NATION in English 24 Jul 81 p 1

[Article by Marva Cossy]

[Text]



BARBADOS has been experiencing its worst ever oil slick. And, according to Barbados Parks and Beaches Commission, chairman, Mrs. Iris Bannochie, it will take another week before the clean-up operation is completed.

Yesterday while touring the troubled area, the chairman said that 60 workers had been put into action from Monday morning in an attempt to get rid of the offensive matter. This, she added, had left the other beaches without cleaning staff.

In describing the situation, manager of the commission, Don Grant, who was also on tour, said that some of the chunks of tar were so large, weighing 15 to 20 pounds, that they required two persons to lift them.

Grant added there was evidence that the slick was destroying marine life. According to him, dead sea-eggs, crabs, lobsters, hedgehogs, barnacles, and other shell fish had been washed ashore.

The affected area stretches along some 15 miles of coastline from the East Coast Road, in St. Andrew, to Bath, in St. John.

After the tar is removed from the beach with rakes and spades, it is conveyed to a particular sand dune on the East Coast where it is buried.

Mrs. Bannochie said that residents of Cattlewash, in St. Joseph, had reported that they had seen a ship cruising along the Coast on Friday afternoon. She added that reports said that the ship was there up until early Saturday morning.

Mrs. Bannochie pointed out that the Defence Force, Chief of Staff, Colonel Rudyard Lewis, had informed her that had the ship's movements been reported, the Defence Force could have sent its aeroplane to check the name of the ship.

She added that with this and other relevant information, the shipping line could be prosecuted under international law.

CSO: 5000/7581

ARBITRATION BOARD CREATED FOR POLLUTION COMPENSATION

Port-of-Spain TRINIDAD GUARDIAN in English 23 Jul 81 p 1

[Text] Cabinet, on the recommendation of Energy and State Enterprises Minister, Mr. Errol Mahabir, has agreed to create a Pollution Arbitration and Compensation Board--a quasi-judicial body--to replace the Oil and Water Board, which ceased functioning since 1972. The decision has been taken in the face of steadily rising complaints by agricultural farmers in the South, who claim that their crops fall victim to oil pollution.

In conjunction with the creation of the new Compensation Board, the Ministry of Agriculture, as a matter of urgency, has been asked to prepare an updated schedule of prices for damage to crops.

The new board will refer to the updated schedule for guidance on the quantum of compensation.

Cabinet also noted that the Ministry of Energy was considering the establishment of a pollution compensation fund, whereby persons engaged in petroleum operations would be required to contribute annually, a certain sum of money, based on a specified formula.

This money would be used to liquidate liability for pollution after the determination of such liability by order of the board.

Mr. Mahabir recently met separately a delegation of farmers from the South, and representatives of four oil companies--Trintoc, Trinidad Tesoro, Texaco, and Premier Consolidated, and Dr. E. Jones, of the Ministry of Agriculture, Lands and Food Production.

After hearing the farmers' complaints, Mr. Mahabir explained that the competent authority to handle all such claims by farmers was the Oil and Water Board, which he himself noted had ceased functioning in 1972, by which time there were several claims outstanding.

Since then, Mr. Mahabir noted, the farmers had been left without any legal recourse regarding their complaints on oil pollution damage to their crops.

When the Oil and Water Board ceased functioning in 1972, for reasons still unknown, there were about 30 to 40 cases pending, some claims made since 1965.

As a result of the board's inactivity, the Ministry of Energy and State Enterprises, had been inundated with complaints from the farmers.

The Ministry continues, in the meantime, to investigate complaints made by farmers concerning oil pollution to crops, to determine the source of pollution and, if possible, to recommend corrective action.

While Mr. Mahabir pointed out that the Ministry of Energy was not the competent authority to settle such complaints, is also did not have the expertise to adjudicate oil pollution complaints or to assess damages to crops. [as published]

The oil companies, on the other hand, were not legally obligated to compensate farmers for crop pollution.

Early Creation

Cabinet was also made aware of the inadequate quantum of compensation paid to farmers for damage to their crops, based on the Government schedule of prices for damage to crops, last issued by the Ministry of Agriculture in 1975.

Mr. Mahabir said yesterday he had met representatives of the oil companies involved, with a view to having the companies respond more rapidly to farmers' valid claims, so as to at least partially alleviate some of the complaints.

Because of the present situation that has emerged, Cabinet agreed on the early creation of the Pollution Arbitration and Compensation Board.

CSO: 5000/7581

NGAMILAND SHOWS SIGNS OF RECOVERY FROM DROUGHT

Gaborone DAILY NEWS in English 7 Jul 81 p 1

[Article by Botswelelo Tlale]

[Text]

CROPS and Animals exhibited during the Maun Show indicated that Ngamiland District has recovered from the serious effect of drought and also the eradication of Foot and Mouth disease in the district has brought life to normal.

About 44 stalls at the show had crops obtained from different part of the district and animals were also in good condition.

In interviews with BOPA, some exhibitors thanked the government for establishing Foot and Mouth disease Vaccine Laboratory in Gaborone.

More exhibits were expected but because some people in the remote areas were not sure whether or not the Maun District Show would be held this year they did not bring their exhibits.

This was confirmed by the Secretary of the Show Committee Mr W. Segabilwe.

The show was held at the sports ground and plans for a new show ground to be used next year are going on according to Mr Segabilwe.

He said that over P12 000 will be spent in the development of new ground at Thitoyamokodi one kilometre from Maun.

The show ground will have a permanent stand.

The secretary mentioned that there will be two toilets and a foot ball pitch at the new ground.

The new move taken by the Show Committee is that the exhibitors will have to pay more for the stalls. During the last shows they were paying P15,40 depending on the size of the stall.

Mr Segabilwe added that after presenting a report of this show at the general meeting a new Show Committee will be elected because it was discovered that the present one was inactive.

Earlier when welcoming the Minister of Agriculture Mr W. Meswele who opened the Maun show, the chairman of the show Committee T.S. Dintho appealed to government to improve the road between Maun and Nata.

He said that since they began trekking their cattle to the Botswana Meat Commission (BMC) many of them died on the road as a result of the condition of that road.

He cited one incident whereby a truck overturned on its way to Francistown killing some of the cattle which were being sent to BMC.

CSO: 5000/5051

AL-QASH FLOODING CAUSES WIDESPREAD DESTRUCTION

Services Disrupted

Khartoum SUNA DAILY BULLETIN in English 16 Jul 81 pp 2-3

[Text] Kassala, July 16 (SUNA)--Most of service installations in al-Qash Delta had been destroyed by the effect of al-Qash River floods, Muhammad al-Amin Hamid, the Eastern Region Minister of Service announced yesterday.

The Minister said that the Regional Ministry of Services had formed health teams for the area of al-Qash Delta, and urged for urgent supplies of medicines from the Central Ministry of Health. All the demanded medicines have actually been dispatched, the Minister confirmed.

On the other hand, the Regional Minister of Finance and Economy, Ahmad Muhammad al-Amin, announced that there are plentiful amounts of supplies in the region. The Regional Ministry had endorsed Ls. 50,000 to meet the damages caused by the floods, and the Sudanese Red Crescent had also donated supplies.

Railway lines and bridges which were partially damaged by torrents will be repaired after recession of al-Qash River, 'Abdallah al-Hardalu, the Minister of Regional Affairs told SUNA yesterday.

Supply Shortages

Khartoum SUNA DAILY BULLETIN in English 21 Jul 81 p 7

[Text] Wagar, Kassala, July 21 (SUNA)--Al-Qash recent floods have affected 22 Sagias and 16 houses here and water has completely surrounded the town. Though supply materials are running short, no epidemic cases were reported.

Citizens of nearby villages whose houses were washed out moved to the town and they were accomodated at schools.

Villagers Displaced

Khartoum SUNA DAILY BULLETIN in English 22 Jul 81 p 3

[Text] Kassala, July 22 (SUNA)--Al-Qash floods are still trapping Oleib village and isolating it completely from the external surroundings.

Some 5,000 of the villages' 7,000 inhabitants had made their diminutive but sad exodus while damages are not yet estimated.

The People's Armed Forces are carrying supply materials by planes to the stricken villages.

The water level in al-Qash river registered 135 cm. 10 am. yesterday recording an increase of 10 cm. within four hours only.

CSO: 5000/4723

ILLEGAL IRRIGATION ALONG SABI RIVER COULD 'LEAD TO DISASTER'

Salisbury THE HERALD in English 15 Aug 81 p 4

[Text]

UMTALI.

SILTATION of the Sabi, Zimbabwe's greatest "inland" river, was a major problem that threatened the viability of the Sabi river valley development schemes, said the chairman of the eastern group of the ICAs, Mr Jim Valentine.

The massive siltation taking place in the river resulted from improper conservation throughout the catchment area, particularly in the communal lands. Streambank cultivation in all areas — including those occupied by squatters — was adding to the problem.

"Illegal irrigation is rife and is adversely affecting established legal schemes. I must warn that the breakdown of any existing conservation practices will lead to disaster as far as our area is concerned. Water is being taken upstream from legal schemes and the result may be that the livelihood of many people will be robbed," he warned.

He cited Nyanyadzi, Chakoka and Nyamarepa irrigation schemes as those worst affected by illegal irrigation upstream.

"Streambank cultivation is taking place, and it is of vital importance to stop this, or else the whole problem will increase tremendously," said Mr Vallentine, adding that siltation of the Sabi, caused by wash-away of sand all over the catchment area, had caused flooding in some parts of the middle Sabi.

The chairman of the Natural Resources Board, Mr Lance Smith, told the meeting the board was extremely concerned at what was taking place in Manicaland and elsewhere. Siltation was a widespread problem, and the board had recently warned the Government that the two proposed dams in the Ndanga and Bikita areas would silt up in 11 years unless proper conservation practices were enforced.

"The NRB is concerned and worried. There is a need for a proper survey, with satellite photography, to see what is happening and what can be done. As far as the commercial land is concerned we are heading for disaster if we settle these areas without proper land use," he said.

The acting provincial conservation officer, Mr Mike Leonard, warned that a complete ecological breakdown could take place generally unless something was done to halt siltation, illegal water extraction and streambank cultivation.

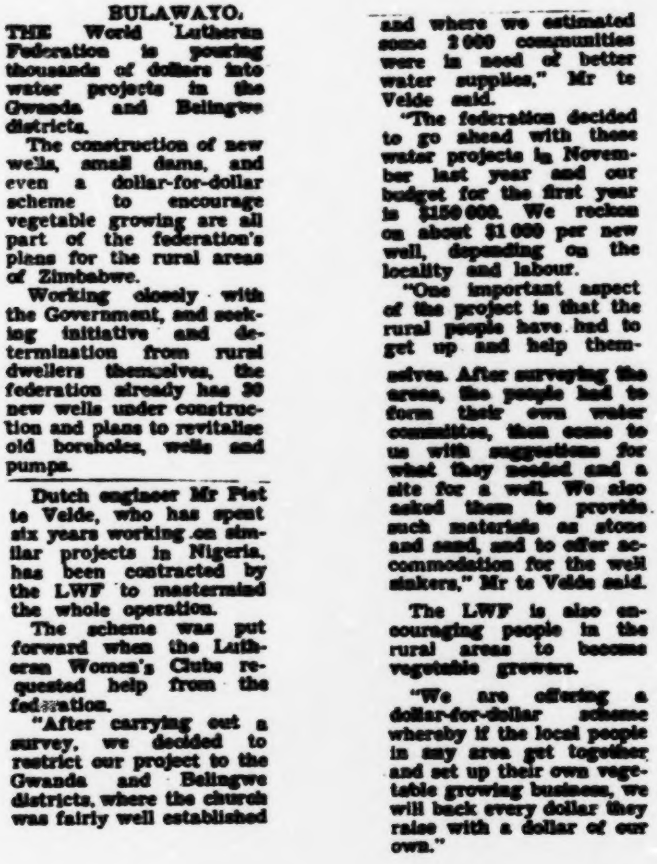
"In the last season, large areas were flooded out by the Sabi. This appears to be happening every year. The area could become a delta within 10 to 15 years," he said.

CSO: 5000/5050

PLAN TO BOOST WATER SUPPLIES REPORTED

Salisbury THE HERALD in English 14 Aug 81 p 3

[Text]



BULAWAYO.

THE World Lutheran Federation is pouring thousands of dollars into water projects in the Gwanda and Belingwe districts.

The construction of new wells, small dams, and even a dollar-for-dollar scheme to encourage vegetable growing are all part of the federation's plans for the rural areas of Zimbabwe.

Working closely with the Government, and seeking initiative and determination from rural dwellers themselves, the federation already has 30 new wells under construction and plans to revitalise old boreholes, wells and pumps.

Dutch engineer Mr Piet te Velde, who has spent six years working on similar projects in Nigeria, has been contracted by the LWF to mastermind the whole operation.

The scheme was put forward when the Lutheran Women's Clubs requested help from the federation.

"After carrying out a survey, we decided to restrict our project to the Gwanda and Belingwe districts, where the church was fairly well established and where we estimated some 2 000 communities were in need of better water supplies," Mr te Velde said.

"The federation decided to go ahead with these water projects in November last year and our budget for the first year is $150 000. We reckon on about $1 000 per new well, depending on the locality and labour.

"One important aspect of the project is that the rural people have had to get up and help themselves. After surveying the areas, the people had to form their own water committee, then come to us with suggestions for what they needed and a site for a well. We also asked them to provide such materials as stone and sand, and to offer accommodation for the well sinkers," Mr te Velde said.

The LWF is also encouraging people in the rural areas to become vegetable growers.

"We are offering a dollar-for-dollar scheme whereby if the local people in any area get together and set up their own vegetable growing business, we will back every dollar they raise with a dollar of our own."

CSO: 5000/5050

CANADIAN ESKIMOS SEEK GREENLANDERS' AID TO STOP TANKERS

Godthab GRONLANDSPOSTEN in Danish 29 Jul 81 p 14

> [Text] Canadian Eskimos want Greenlanders to participate in a hearing that will form the basis for a final decision on the ultimate fate of APP [Arctic Petroleum Project].

A final decision on the fate of APP is fast approaching.

The Canadian energy agency, the National Energy Board, plans a big hearing this fall on the pompous project to extract natural gas in the far northern Arctic and transport it to the south in icebreaking supertankers past the west coast of Greenland. The hearing will form the basis for the Canadian government's decision to give the green light for the project or not.

"The hearing is expected to take place in Canada in October but it could be postponed until next summer," said the president of the Inuit [Eskimo] group ICC [Inuit Circumpolar Conference], Hans Pavia Rosing who last week hosted the second meeting of the ICC task force working on the APP project.

Want Greenlanders at Hearing

Canadian Eskimo representatives on the task force have expressed their strong desire for Greenland participation at the upcoming hearing to present arguments in support of Greenland opposition to the project. This would strengthen the united Inuit opposition.

The task force discussed various possibilities for Greenland participation at the hearing. And Hans Pavia Rosing told AG [GRONLANDSPOSTEN] that the task force came to the conclusion that it would be best if the Greenland administration was represented at the hearing. The alternative would be representatives from popular organizations such as the organization of fishermen and trappers, KNAPK [expansion unknown].

The task force on APP has authorized ICC president Rosing and EC Parliament member Finn Lynge, a member of the task force, to initiate talks with the Greenland administration on this matter.

Strong Doubt

Representatives of the Canadian Eskimoes in the ICC task force have expressed strong doubt as to whether various information on motives behind Greenland opposition to APP ever gets into the hands of the Canadian Energy Board. Therefore there is a grave risk that the Greenland views will not be presented at the hearing unless the Greenlanders themselves participate.

The task force has discussed various possibilities for more effective opposition to APP. This could be done through information campaigns in other countries where they don't know much about the natural gas project--for example by turning to the many environmental organizations in Europe. "A number of possibilities for opposition activity were discussed but I think it is too early to tell you more about them at the present moment," said Hans Pavia Rosing.

Alaskan Eskimoes Invited

To involve all three Inuit countries in the work concerning the APP project the task force decided to ask Alaskan Eskimoes to participate on the task force. They had already expressed interest in doing so.

The Aussivik meeting's desire for membership on the task force was discussed. Interest was expressed in this and the Aussivik committee will be invited to hold more detailed talks. The Aussivik 81 request that the task force send a representative to the board of the newly-established Aussivik Fund Against APP was complied with. And it will be Pavia Nielsen who will represent the task force on the board of the fund.

6578
CSO: 5000/2163

SEA POLLUTION THREATENS PAPHOS BEACHES

Nicosia TA NEA in Greek 17 Jul 81 p 8

/Article by Elena Karaiskou: "Health of Kato Paphos Residents Threatened"/

/Text/ Even though it is the only "oasis" of greenery amidst the newly constructed building complexes, thus causing a "break" in the row of assembled concrete, the Leivadi Ton Kalamionon in Kato Paphos is, nevertheless, the sinister number one enemy of public health. It "hosts" all the dirty waters flowing out of drainage pools of the complexes constructed since 1977. It covers a circular area with "Myrra" as center and extends beyond the Vine Products Cooperative Marketing Union.

Since Kato Paphos lacks a central sewage system and the building complexes have only drainage pools instead of biological cleaning systems, all dirty and infectious waters settle in the Leivadi Ton Kalamionon.

Through ditches dug long ago--to avoid water stagnation and protests by the people--these dirty waters flow to a sea exactly opposite the public baths. Since Paphos lacks a public square, the people--perhaps even from habit--find relief during the hot summer afternoons in these waters which are filthy with wastes and all sorts of refuse coming from the asphyxiated pools of apartment houses and some hotels.

Perhaps never before has the health of the Paphos people been threatened so criminally and unscrupulously. According to medical opinion the Leivadi Ton Kalamionon is the greatest nest of microbes in the heart of fast developing Kato Paphos with unforeseen consequences as concerns the spread of diseases like cholera and typhus.

This impermissible situation which endangers the people's health and defames our city to all visitors was first brought to the attention of the Paphos authorities by the physicians themselves.

Paphos Mayor

Paphos Mayor Giannis Agrotis whom TA NEA contacted regarding this source of pollution gave the following justification, after first requesting that we play down the issue so that the city might escape defamation:

"Historically, the problem began when the construction business failed to initiate a biological drainage system for all wastes from construction, even though the permits issued to them do mention such measures. But no one implements them and it is natural that the dirty waters should concentrate there [Leivadi]. The measures we have taken aim at the disinfecting of the "Leivadi" waters and soon we will cover them with gravel.

Long-term Plan

"There is a long-term plan for [the construction of] a sewer system in Kato Paphos at a cost of 200,000 pounds," he added. To our question of why the construction companies are not forced to install biological drainage system for reasons of public benefit, the mayor failed to respond. Yet there exists a regulation which provides that when public safety dictates, a measure should be considered necessary and subject to immediate implementation.

According to a reliable civil engineer, from 1977 until now about 50 to 55 permits were granted for the construction of big complexes and hotels in the beach area from "Myrra" to and including the Theano Hotel. None of these crowded buildings has a biological waste cleaning system. All have drainage pools with unforeseen results for the future.

On the other hand, in order to fully understand the seriousness of the problem which threatens to choke the whole Kato Paphos if no radical measures are taken soon, I discussed the whole issue with a civil engineer of a large technical company which constructs systems of biological cleaning of wastes.

Sewage Problem

"First of all," said the engineer, "if the mayor indeed wanted Paphos to have a central sewage system then this should have already been done this way: For each construction permit issued, instead of forcing the interested persons to build an independent biological cleaning system, he should have instead recommended that the amount spent by them for independent systems should be earmarked for the construction of a central sewage system thus providing for Kato Paphos an infrastructure project. At this very moment," added the engineer, "only one construction company is building a biological cleaning system and soon, for lack of a central system, fast developing Paphos will be facing serious danger." He, moreover, pointed out that it is imperative for Paphos to get a central sewage system and that further delay will be at the expense of both the public health and the people's benefit.

Absolute Silence

The delay in the construction of the Paphos central sewage system may seriously affect the city's further development. The appropriate authorities maintain an absolute silence [on the subject]. The mayor is not in a hurry and only blames any individual who puts up a house or building but fails to install a private waste cleaning system. He does not, however, take any measures and leaves it up to the good will of the builder. But the problem is very serious with immense adverse consequences for Paphos. The dirty waters from all buildings in the area flow to Leivadi Ton Kalamionon where they remain stagnant thus creating an open cesspool. These waters are subsequently channeled through a ditch and an underground tunnel to the beach where thousands of bathers swim every day thus infesting themselves and their children.

Official Version

The official side gives assurances that the matter is being studied on a long-term basis. Yet tens of buildings are being constructed without advance planning. The development of Paphos thus continues...with buildings going up at a fast rate, with pools being filled to capacity daily, while tank trucks are trying to empty them and while the stagnant yellow-green waters at Leivadi Ton Kalamionon are covered with thousands of giant mosquitoes which attack and bite the customers of the night centers in Kato Paphos.

It is of primary importance that the foundations be laid for the construction of a central sewage system in Paphos as a prerequisite for its pragmatic development. There is no room for delays or justifications when the people's health is endangered.

7520
CSO: 5000/5548

PHARMACEUTICAL FIRM OFFICIAL ARGUES AGAINST NEW LAW

Copenhagen BERLINGSKE TIDENDE in Danish 8 Aug 81 pt II p 2

[Article by civil engineer Kim A. Hueg, diploma in commercial science, director of Novo Industry, Inc.]

> [Text] The environmental affairs minister's proposed revision of environmental laws involves changes that would harm industrial job creation, exports and earnings and very little time has been given in which to present objections.

The environmental affairs minister has issued a proposed revision of the Environmental Protection Act (referred to hereafter simply as the "environmental law"). The proposal maintains the original principle of the law: when evaluating a firm's pollution the effects of the pollution must be weighed against the social benefit of the firm as well as the costs of reducing the pollution.

But the revision draft contains some important changes the adoption of which would be detrimental to the job-creating capacity of businesses as well as to exports and earnings.

The environmental affairs minister wants to remove the authority from counties and municipalities to approve applications from big firms (Chapter 5 firms) for expansion and new construction and centralize the handling of such cases in the hands of the Environmental Agency. The minister already has the ability under the present law to "call in" big cases so the intent must be to greatly increase centralization.

However as the counties have pointed out there is a great desire to preserve and expand cooperation at the local level and in the 8 years since the environmental law appeared county governments have substantially increased their staff of experts. Today the handling of these cases is rapid, competent and generally satisfactory to business. Thus the minister is wrong when he says that business interests themselves want case handling centralized in the hands of the Environmental Agency. And isn't it also in the best interests of the public to have cases dealt with locally where citizens can gain direct insight into what is happening from municipal and county politicians as well as local papers, citizens' meetings, etc?

Not only is it being proposed that local bodies be cut off from the process, in some cases the right of appeal to the Environmental Appeals Board would be restricted. This would make the Environmental Agency the highest administrative and regulatory authority as well as the appeals board, normally an undesired combination.

The argument for centralizing cases at the Environmental Agency and reducing access to appeal is that this will promote rapid handling of cases. It is doubtful that this will be the result. A few years ago Novo Industry had a case that extended over 2 years and the handling of this case led to no changes in the original project with the exception of increasing the cost by 12 million kroner due to the delay. The 2-year delay was caused by the handling of the case by the Environmental Agency and the Planning Agency. The local authorities and the Appeals Board handled the case quickly. As you know the PVC case in Skaelskor lasted more than 3 1/2 years and the Topsoe case in Frederikssund lasted 4 years both because of the Environmental Agency's handling of the cases. Against this background it seems unfortunate that the fast-acting bodies will now be cut out of the process while the slowmoving central agency is being upgraded. Former Environmental Affairs Minister Ivar Norgaard suggested in 1978 that a 4-month limit be set on handling cases by the agency. Why has this constructive idea been left out of the proposed bill?

When the environmental law was presented in 1973 the biggest objection made in Folketing was that it lacked firm guidelines and gave great authority to the minister. The reply was that we had very little experience in this area and therefore had to start out with a framework law. The 7-8 years since then must have provided the administration with the experience material it needed. The Environmental Agency should now be able to give firm guidelines so that each individual case does not have to be applied for, dealt with, appealed and counter-appealed all the way through the system.

Clear guidelines could relieve one of the main problems with the environmental law: a big firm can afford to respond to the objections of the administration at this time. Including a permanent environmental staff of 8 people, Novo spent 2-3 million kroner this year on the administration of environmental tasks in addition to spending tens of millions on avoiding pollution. Medium-size and small firms do not always have the capacity and personnel for this work and are placed in an uncomfortable squeeze. Clear rules would lead to fewer cases and restrict ministerial power which today is used by the dedicated case handlers at the Environmental Agency to impose great burdens on businesses.

A central point in the proposed law is an expansion of the Environmental Appeals Board. The board now consists of a judicial chairman and experts appointed from case to case from two lists of specialists. The lists are drawn up by the public sector (the Environmental Agency) and business organizations respectively. Experts are chosen in the areas of environmental technology, ecology, business economics and production technology. The main idea is to achieve as much expertise as possible and avoid political influence. There is broad satisfaction with the work of the Environmental Appeals Board and respect for its decisions is great.

Under the proposal the appeals board would be expanded. Among other things it would include representatives elected by the Consumers' Council, the Danish Nature Conservation Society and the Danish League of Sport Fishermen. Why are these the only associations approved? Using a little sense of humor, one might ask what the minister has against the Danish Association of Beekeepers, the Danish Botanical Society, the Ornithological Association, the Animal Protection League, the League of Allotment Gardeners and the Scouts, not forgetting the nudists.

Is quicker case handling the goal? Is it expert and responsible study that will promote a good environment and prosperity that is being sought? With all respect to the associations mentioned one must say that the very complex technical, economic and judicial considerations that take place at the Environmental Appeals Board require expertise and experience rather than attitudes and political viewpoints. Can the minister name a single appeals case that would have turned out differently if the Consumers' Council, for example, had participated in handling it?

If one wants changes even though the appeals board is functioning well, one could allow the organizations mentioned to make up one of the lists along with the Environmental Agency. Business firms could then write out the other list. This--in contrast with the minister's proposal--would reduce our fear that the Environmental Appeals Board could turn into a forum for the manifestation of special positions at the expense of its current professionalism.

If a municipality or firm wants to expand a plant the environmental law makes it possible for people directly affected to appeal. The minister now wants to give such access to appeal to nationwide associations that safeguard general interests in the environmental area (such as NOAH and OOA [expansions unknown], for example?).

The consequence of a complaint is that an expansion of a firm or a municipal facility is delayed. There are many scary examples of this. As early as 4 years after the enactment of the environmental law it was seen that the situation was impossible. An adaptation in 1978 makes it possible to dispense with the delaying effect of a complaint so building can continue on one's own responsibility and at one's own risk while the complaint is being evaluated. But utilization of the facility naturally has to wait while the complaint is being handled. This reduced the harmful effects of the worst abuses of the appeals process.

There must be access to appeal, no one doubts that. Many business and municipal decisions are complex and comprehensive in their effects. One can overlook details and things of importance to the immediate environment and every piece of good advice and each justified objection should be included in the evaluation. When the environmental law was enacted, however, it was made quite clear that complaints could be submitted only by local people and associations directly affected by the planned expansion. It was therefore an evasion of the law and a gross example of how a nationwide organization can sabotage the machinery that the 2-year 12-million kroner case involving Novo, referred to above, was initiated by a political party. The party came in the minority when the town of Gladsaxe gave permission in 1976 for the construction of a power silo 30 meters high in the industrial area where Novo operates in Bagsvaerd. It was unreasonable that the party could then pursue the matter further under the appeals opportunities provided by the Environmental and Municipal Planning Acts.

No one can deny that the popular environmental protection groups have had a good influence. Several of these grass-roots organizations have made a positive contribution to our good environment by drawing attention to pollution problems. Take an example of current interest to Novo. The residents around Jammerland Bay near Kalundborg where Novo has a factory raised questions about the waste water disposal methods of the municipality and several large firms. Of course the Jammerland Bay Pollution Committee (JAFU), an association of directly affected residents, should have the right to ask West Sjaelland County to look into the bay's "tolerance" in order to find out how much waste water can be discharged into it. No one is interested in overloading this recreationally valuable piece of water. (For the sake of clarity it should be mentioned that interest in Novo's waste water is not based on the presence of dangerous substances such as mercury but on the fact that the waste water contains nutrients from fermentation processes which require dilution.)

However it is a very long leap from giving the right to complain to locally affected people and associations to giving the same right to nationwide groups without direct local ties, without (grass) roots in the concrete problem. One could then get into the odd situation that all those locally involved agree on a new community or private initiative but have to wait several years while the case is dealt with by the Environmental Agency because of complaints initiated somewhere else in the country by politicizing organizations with a great need for public relations coverage.

In addition to maintaining access to appeal for those directly affected the rules on how to handle complaints should be tightened up, as well as which complaints should be dealt with. Minor or previously handled complaints along with frankly meaningless objections should not be accepted. The environmental affairs minister should consult Interior Minister Henning Rasmussen who when he was mayor experienced delays in alterations to Esbjerg Airport due to an irrelevant complaint, delays that cost the taxpayers 700,000 kroner. Henning Rasmussen's remarks at the time indicated that he would favor tightening up the concept of complaint.

The idea of counteracting the rising number of complaints by imposing a fee has not won support. In well-organized Switzerland several cantons provide for the publication of building permits and if more than say 100 of the local residents object the project must be looked into more carefully. This might be a more democratic way than a fee to weed out the flimsiest complaints.

If the legislators want to promote the business community's ability to create jobs and its export and earnings possibilities they should consider these things:

Dropping the proposal to centralize Chapter 5 cases in the hands of the Environmental Agency. The necessary expertise already exists on the county level and there is broad interest in close cooperation at the local level.

Introducing a time limit of 3 or 4 months for handling cases in the environmental and planning agencies.

Preserving the Appeals Board as an expert body instead of making politicization possible.

Keeping the "weeds out of the grass-roots." Local influence should not be ruined by unauthorized national associations.

The proposed revision of the environmental law was sent out on 1 July and written comments are supposed to be in the hands of the Environmental Agency by 12 August at the latest. It is unacceptable to provide such a short grace period--and in the middle of the vacation season at that--in which to deal with this vital issue.

6578
CSO: 5000/2163

UNAUTHORIZED HYDROELECTRIC DAMS THREATEN TROUT, SALMON

Paris LE MONDE in French 22 Jul 81 p 9

[Article by Marc Ambroise-Rendu: "The EDF Is Doing Its Work In Double Quick Time and the Protectors of the Environment are Protesting"]

[Text] The fishers are getting angry. For more than 20 years they have been defending French streams against pollution of all sorts, damage caused by gravel, dams without fish ladders and with untimely discharges of water. The strengthening of the protective legislation and the reconquest of the rivers are due to their vigilance.

This time it is the EDF [French Electric Company] that they are attacking. The National Association for the Protection of Salmonidae has just sent a letter to Michel Crepeau, the minister of the environment, to ask him for a "serious" investigation of the hydroelectrical plant construction sites opened in different regions of France by the national enterprise. The fishers wish to be associated with this investigation and with the publication of its results.

The defenders of the trout and salmon are not taking alarm without cause. They cite as an example the case of the Puylaurent Dam in Lozere. The EDF engineers want to dam the upper Chassezac Valley with works 68 meters high and 250 meters long which would flood 67 hectares of land and retain 12 million cubic meters of water. It is a question of cutting down possible floods and of regularising the supply to four falls located downstream. The dam would make it possible to produce an additional 15 million kilowatthours, or the equivalent of 3,300 tons of oil, taking one year with another.

Does this contribution of energy justify the damage which the work threatens to cause? Two streams will be submerged for several kilometers. The drop of the waters in summer will leave the banks exposed to a height of 40 meters. Downstream from the dam, the Chassezac will be reduced to a thin trickle of water in which it is doubtful that trout could survive. In short, according to the environmental department, the effects on the site and on the natural environment would be incommensurate with the energy furnished indirectly by the works. Consequently several months ago they issued an opinion strongly opposed to the request for a concession filed by the EDF.

Now these works are going at a good pace in the Chassezac Valley. A road, earthworks, land clearing, and blasting are ripping the ground apart. The EDF talks of "reconnaissance soundings." But if authorization is ultimately refused, who will repair the damage? The Association for Protection of Salmonidae is going still farther: it is accusing the EDF of wanting to confront the minister of the environment with a fait accompli.

This is not an idle accusation, either. Fearing that certain of its projects would be modified or questioned by the government, the national company is accelerating the rhythm of its work everywhere. This is true at all nuclear sites--with the exception of the Plogoff site, which has been definitively eliminated--the advisability of which would be reexamined. This is also the case at the numerous hydroelectric construction works, whether new dams or raising old works are concerned.

With legitimate concern to reduce construction costs, the EDF wants to conduct its work with maximum speed. For a long time its officials have acquired the habit of conducting legal procedures and preliminary works concurrently. But this haste results in curious situations.

Thus the Eygliers Dam construction works (Hautes-Alpes) on the Guil, a tributary of the Durance, were begun before the public investigation and completed last summer even though the declaration of public utility had not been issued. Another work situated in Brassac on the Tarm, has been completed, even though the administrative investigation is in progress. It is true that the engineers are irritated by the administration's slowness of action. The procedure for investigating a request for a hydroelectric construction concession takes 3 years. But does that justify, for example, the Ferrieres Dam on the Ariege having started to go up in 1980 when the decree of concession had not yet been signed?

For it seems that the EDF is deliberately disregarding the objectives of the environmental department. A construction site has been in full operation in Saint-Amandin, in Cantal, since last summer, even though the concession is far from being granted and the minister of the environment has written a clearly unfavorable opinion. A fait accompli? A good example of it is that of the Age hydroelectric plant on the Creuse, which has just been put into operation even though the investigation is not over.

The works called "preliminary" often have broad backs. Thus, in Haute-Romanche (Isere), they are in the process of drilling a 4,000 foot long gallery in its ultimate dimensions. They are dubbing it a reconnaissance gallery and dispensing with all authorization.

Very Useful Dams

Where raising a dam or completing old engineering is concerned, the EDF acts with still more freedom. With the endorsement of the ministry of industry, the national company is dispensing with any public investigation, although the works most often involve a change in the flow of rivers. One could also cite a half dozen operations conducted in this way in contempt of legal procedures, especially in Tarm, in Savoie, in Dordogne and in Ariege.

These practices have been arousing the anger of the fishers' associations, since they are conducive to failure to take any precautions with respect to the natural environment. They are also disturbing to the environmental officials who are wondering what their purpose is. They are especially threatening to democratic control of improvement operations.

No one contests that certain dams are very useful. That is no reason for dispensing with any public investigation. The energy crisis has already served too often to justify many blows to the principles of dialogue and participation. That such blows are continuing to happen and that they are the act of a nationalized enterprise only makes them more open to criticism.

9380
CSO: 5000/2156

NITRATES, MERCURY, RADIOACTIVE ELEMENTS UNCHECKED IN WATER SUPPLY

Paris LE MATIN in French 2 Jul 81 p 17

[Article: "Drinking Water: The Quality Is Often Doubtful"]

> [Text] Such is the accusation made by researchers at the conclusion of an investigation carried out in 11 districts which raises serious questions about the operation of the monitoring system required by law.
>
> An oft-failing monitoring system, imprecise and often overwhelming regulations, and infrequent controls: such are the accusations made by a team of researchers from the Museum of Natural History at the conclusion of an investigation carried out in 11 districts. In a report to be published in the near future, they reveal that as a result of these deficiencies, "A quarter of all rural communities studied in the investigation have water with questionable bacterial content." In some cases, the amount of pollution reaches a dangerous level.

Is water from the tap really up to its reputation of quality and purity? It is to this question that the investigation carried out in 11 districts (1) by the Natural and Modified Systems Evolution Laboratory team led by Prof Claude Lefeuvre answers negatively. In spite of the July 1978 law concerning free access to official documents, investigators often had to resort to devious means of obtaining information. In 7 out of the 11 districts, investigators have been unable to obtain access to the results of analyses and controls carried out by the administration.

This may explain something else: District Management of Health and Social Affairs (DDASS) rarely has sufficient means to carry out its monitoring mission. Thus, several districts are still awaiting the appointment of a Health Engineer. Then, there is the problem of finding competent laboratories to carry out analyses at the local level. In three of the districts, laboratories perform analyses which do not conform to the law. A fourth district even makes use of the services of a non-approved laboratory. All this results in "a great variation in the efficiency of the monitoring system."

---

(1) Allier, Aube, Bas-Rhin, Cotes-du-Nord, Dordogne, Drome, Eure, Jura, Loiret, Maine and Vendee. The study was also supposed to cover the Nord district, but investigators found it impossible to gain access to the required documents.

The reports adds that this situation also results from "inadequacies" and "inaccuracies" in the many regulations which are part of the public health code. For instance, detection of heavy metals such as mercury, or pesticides and detergents, is not yet required by law. Detection of radioactive elements is only random. Finally, there is no required standard for nitrates which are one of the main sources of pollution of drinking water today, and which are known to cause serious illness, particularly in babies. The study shows that the maximum 45 milligram/liter threshold established by the World Health Organization is often exceeded in rural areas, in all districts surveyed. In other words: existing legislation is in need of being overhauled.

How is water quality monitored? The administration may use three different types of analysis, but the report shows that they are seldom used. Type 1 analysis, which is the more frequently used, is only required at the opening of a new water source. As a consequence, only one district out of 11 has used this type of analysis other than at the time of opening of a new source. In this case, it resulted in the detection of mercury at a concentration three times higher than that tolerated by the WHO. The experiment was not repeated!

The other two types of analysis required by regulations are: T2, concerning detection of nitrates and T3 (known as reduced monitoring and limited to the detection of bacteria). They are used infrequently. Only two of the districts perform T3 analysis on their water distribution network once a month, six others do it twice a year and another does it once a year. It is true that in most cases, the DDASS do not even have water distribution network maps and that source locations are frequently unknown and inaccessible (in one district, 60 percent of the source locations are unknown!), which makes impossible the implementation of protective areas which have been required by law in the last 13 years.

Still concerning the subject of inadequacies, the report shows that district services generally know nothing about the sanitary condition of the distribution networks, the reservoirs and their cleaning schedule. It also shows that in one of the three districts which were studied in detail, the DDASS can only monitor communities which are not supplied by private companies. In cases of bacteriological alert, mayors often refuse to allow desinfection of the water because "people complain that water tastes like chlorox."

The report concludes that "none of the districts studied corresponds to the ideal monitoring situation that citizens can rightfully expect." The result is that in 6 districts out of 11, 30 to 40 percent of rural communities are supplied with contaminated water, and that in 2 districts, bacteral pollution is such that water is actually dangerous.

6445
CSO: 5000/2159

CONFERENCE IN SVALBARD DISCUSSES AREA'S ECOLOGY

Oil Drilling Pollution Feared

Oslo AFTENPOSTEN in Norwegian 8 Aug 81 p 30

[Article by Aashild Sorheim Erlandsen: "Eco-System in Arctic Different and Vulnerable"]

[Text] "The ecological interplay, of which we now begin to see the contours, must not at the start make us assume that Svalbard and the Arctic funtion in the same way as mainland Norway. Therefore we must increase our knowledge of conditions in Arctic areas. This is necessary to enable us to meet the development, easily predictable, that will come in a few decades," said Research Leader Erling Sendstad of SINTEF [expansion unknown] in his lecture on the Svalbard ecological system at the conference on technology in the Arctic. The first part of the conference has dealt chiefly with the limiting conditions applicable to activities in Svalbard, i.e. the political, administrative, and natural conditions. Thursday was devoted to geology, and on Friday researcher Olav Liestol dealt with the climate, ice conditions and permafrost, the permanently frozen ground that we still know little about. The sea ice was dealt with in a separate lecture.

In his lecture on the ecology system Erling Sendstad touched upon oil pollution and the conditions special to the Arctic in this connection; among other things that there is biological activity at various times during the year.

"It is said that drilling should not be done in winter. But I believe that the consequences of a spill are perhaps less in summer than in winter," said Sendstad. "Other conditions to which special attention must be given are low temperatures, the thick animal fat layers, that animals give birth to few young, which in turn live longer so that they are affected over a longer period of time," said Sendstad.

Research, Planning Coordination Studied

Oslo AFTENPOSTEN in Norwegian 10 Aug 81 p 40

[Article: "Research and Planning Must be Coordinated"]

[Text] The Storting report on environment protection, mapping, and research in the polar areas will be completed by the environment ministry during next winter," said Officer Chief Erik Lykke on Sunday at the conference on arctic technology.

The future role in Svalbard of the Norwegian Polar Institute will be dealt with in the report, among other things. "The liaison between the Polar Institute and the universities and colleges must be considerably strengthened to enable coordination of research and planning to function better than it does today," Lykke stressed during the debate after the lecture. "There is reason to anticipate that the Barents Sea and Svalbard in coming years will be areas of intensified fishing and increasing exploration for oil," said Lykke in his lecture.

He therefore stressed the importance of gaining better knowledge. "We still have the opportunity to manage things so that we shall not be pressed for time when decisions must be made."

As concerns the future role of the Norwegian Polar Institute, Lykke said: "Some of the Institute's tasks are today perhaps of less importance than they once were, others are not adequately covered. Developments have among other things brought with them growing direct engagement in the Svalbard area by larger specialized institutions. It is necessary to have clarified what consequences this will have for the position of the Norwegian Polar Institute. In particular, it is necessary to take a look at whether the Institute's activities should to a higher degree be concentrated on tasks which cannot be handled equally well by other Norwegian institutions.

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14 September 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 322

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14 September 1981

WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

No. 322

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AUSTRALIA

ALCOA REDESIGNS SMELTER TO CUT FLUORIDE EMISSIONS

Melbourne THE AGE in English 3 Aug 81 p 6

[Article by Peter Roberts]

[Text] For the second time, Alcoa of Australia has redesigned its proposed Portland smelter to reduce the amount of fluoride pollution

But the new fluoride level--contained in the company's formal application for an air pollution licence--is still twice that achieved by the world's cleanest aluminium smelters in North America.

These smelters were built by the Anaconda company at Mt Holly in South Carolina and by Alumax at Sebree in Kentucky, and are emitting 0.5 kilograms of fluoride for every tonne of aluminium they produce.

When Alcoa first announced its Portland project, an emission level of 1.38 kilograms per tonne was proposed. This was later reduced to 1.2 kilograms per tonne in a supplementary environment effects statement for the project.

Its application to the Environment Protection Authority now asks for an emission limit of 1 kilogram per tonne.

The licence application is available for public scrutiny at the EPA in East Melbourne. The authority has four months in which to make a preliminary determination of the licence to be awarded to Alcoa. The public and the company will then have 45 days to object to the determination.

Alcoa's Portland project manager, Mr Ray Roberts, said yesterday the reductions had been possible because of improvements in technology. He declined to comment on whether one kilogram per tonne was the best the company could achieve, or whether other smelters were less polluting.

"It would be premature for me to comment at this stage," Mr Roberts said. "The EPA will in time come up with its own assessment."

The level proposed by Alcoa means the $465 million first stage of the project would emit 132 tonnes of fluoride to the air each year once it came on stream in mid-1983.

Actual pollution levels in the town of Portland depend on meteorological conditions. High concentrations of fluoride can be toxic to humans, grazing animals and plants.

A project officer with the Australian Conservation Foundation, Mr Andrew Herington, has asked the EPA to reject the Alcoa proposal.

"For many years the EPA has talked about requiring that the best possible technology be used in major projects such as Alcoa at Portland," Mr Herington said. "Now is the time to put that policy into practice."

CSO: 5000/7584

AUSTRALIA

BRIEFS

HERBICIDE SPRAYING PR[illegible]—Residents in the north of Victoria have forced the State Forests Commissi[illegible] to postpone the spraying of pine plantations with the herbicide 2,4,5-T beca[illegible] of their threat to seek a Supreme Court injunction. The herbicide has caus[illegible]oncern because it contains the same deadly chemical as the defoliant, Agent Orange, used by the United States forces in South Vietnam. The commission wanted to use 2,4,5-T to clear undergrowth but had made an agreement with tobacco farmers in the area around Bright, 210km northeast of Melbourne, not to carry out the spraying after August 1. The local residents became concerned earlier this week when they received news of the plan to use a helicopter to spray the plantations. Many pregnant women said they would move away while spraying was in progress. Then on Wednesday the Wandiligong Preservation Society said it would seek a Supreme Court injunction on the grounds that the herbicide was a health risk. The court action was held up when the commission rang the society's solicitors to say that the spraying would be postponed. The commission says the 2,4,5-T complies with the standard of the National Health and Medical Research Council. It said that in the Bright area the spray was to be used 2-1/2 km away from the nearest house. However, the residents are now planning legal challenges to the spraying proposed for next year. [Excerpts] [Canberra THE AUSTRALIAN in English 31 Jul 81 p 9]

CSO: 5000/7584

WORLD BANK, EEC TO FUND AFFORESTATION PROJECT

Calcutta THE STATESMAN in English 29 Jul 81 p 12

[Text] The World Bank and the European Economic Community have agreed to provide funds for long-term afforestation and soil conservation projects in West Bengal. The two projects are estimated to cost Rs 36 crores.

Mr Parimal Mitra, State Forest Minister, said in Calcutta on Tuesday that a delegation comprising officials of the West Bengal Government and the Centre would hold discussions with the representatives of the World Bank on August 3 in Washington for signing an agreement.

The project, spread over six years from 1981-82, will cost Rs 34 crores. The State Government's share of the project cost is Rs 18.38 crores and the rest will be provided by the World Bank.

The project envisages bringing 93,000 hectares under social forestry till 1986-87. Trees will be planted on private land, in degraded forests and along streets.

The EEC aided pilot project will cost Rs 2 crores and lay emphasis on both afforestation and soil conservation in the catchments of the Keleghai river in Midnapore district and the Mayurakshi river in Ribhum district. The project is divided into two schemes. For each of the schemes Rs 1 crore has been earmarked. The schemes will be implemented in five years from 1981-82.

The Keleghai scheme covers, a 1,078 square kilometre area in the upper and middle catchment of the river. Soil conservation and plantation of trees will be undertaken simultaneously. The Mayurakshi scheme will benefit 722 square kilometres in the catchment of the river. Seedlings of eucalyptus, neem, mahua and cashew nut trees will be planted.

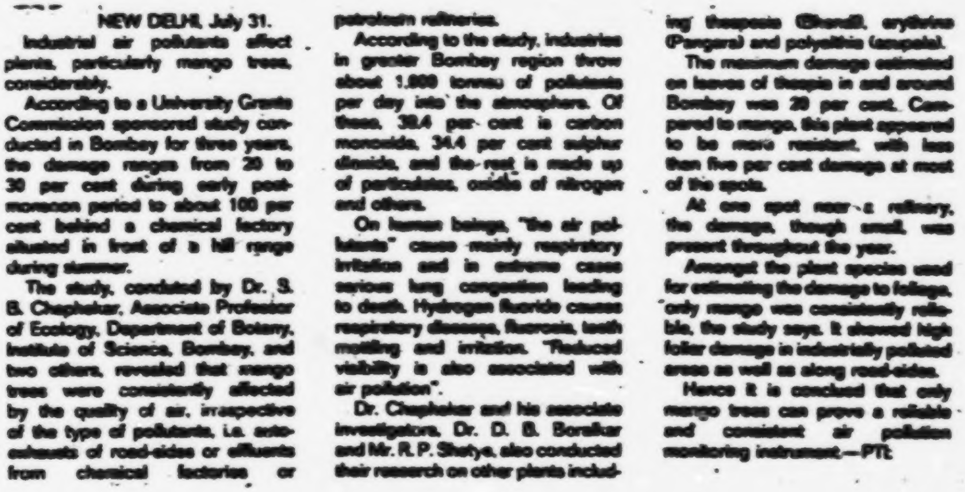
Mr Mitra said that the EEC would give Rs 1 crore as grant for the project and the State Rs 1 crore. He said that although the EEC would contribute 50% of the project cost as grant, the Centre would retain 20% of the 50%. Since the amount involved was a grant, the entire amount should come to the project, he added.

CSO: 5000/7060

BOMBAY STUDY CITES INDUSTRIAL POLLUTANT DAMAGE

Madras THE HINDU in English 1 Aug 81 p 9

[Text]



NEW DELHI, July 31.

Industrial air pollutants affect plants, particularly mango trees, considerably.

According to a University Grants Commission sponsored study conducted in Bombay for three years, the damage ranges from 20 to 30 per cent during early post-monsoon period to about 100 per cent behind a chemical factory situated in front of a hill range during summer.

The study, conducted by Dr. S. B. Chaphekar, Associate Professor of Ecology, Department of Botany, Institute of Science, Bombay, and two others, revealed that mango trees were consistently affected by the quality of air, irrespective of the type of pollutants, i.e. auto-exhausts of road-sides or effluents from chemical factories or petroleum refineries.

According to the study, industries in greater Bombay region throw about 1,800 tonnes of pollutants per day into the atmosphere. Of these, 38.4 per cent is carbon monoxide, 34.4 per cent sulphur dioxide, and the rest is made up of particulates, oxides of nitrogen and others.

On human beings, "the air pollutants" cause mainly respiratory irritation and in extreme cases serious lung congestion leading to death. Hydrogen fluoride causes respiratory diseases, fluorosis, teeth mottling and irritation. "Reduced visibility is also associated with air pollution".

Dr. Chaphekar and his associate investigators, Dr. D. B. Boralkar and Mr. R. P. Shetye, also conducted their research on other plants including thespesia (Bhendi), erythrina (Pangara) and polyalthia (asupala).

The maximum damage estimated on leaves of thespia in and around Bombay was 20 per cent. Compared to mango, this plant appeared to be more resistant, with less than five per cent damage at most of the spots.

At one spot near a refinery, the damage, though small, was present throughout the year.

Amongst the plant species used for estimating the damage to foliage, only mango was consistently reliable, the study says. It showed high foliar damage in industrially polluted areas as well as along road-sides.

Hence it is concluded that only mango trees can prove a reliable and consistent air pollution monitoring instrument.—PTI

CSO: 5000/7061

BENGAL SEEKS STEPS TO CHECK FARAKKA EROSION

New Delhi PATRIOT in English 8 Aug 81 p 4

[Text] WEST Bengal Minister for Judicial and Legislative Affairs Hashim Abdul Halim has strongly urged the Centre to take immediate remedial measures to check the massive erosion in the Farakka barrage region that would seriously threaten the two districts of Malda and Murshidabad in the State.

Mr Halim, who represented Chief Minister Jyoti Basu at a meeting of the Ganga Flood Control Board in the Capital on Friday, told newsmen that since the completion of the Farakka barrage in 1972 there has been substantial erosion in the left bank of upstream part and erosion in the downstream part has assumed frightening proportions.

To corroborate his contention, he said in 1978 over 500 hectares of land in the upstream part and 2,300 hectares in the downstream part had been lost to the Ganga. The police station in Dulinjan and the railway line there had been washed away. The National Highway 34 was also threatened.

In 1978, the Pritam Singh Committee set up to examine the question of erosion in the Farakka barrage region had proposed remedial measures amounting to Rs. 293.75 crores but practically nothing had been done by the Centre to control erosion. The Board was dragging its feet and it was prepared to spend only Rs 27 crores for the purpose.

He said it was his distinct impression that the Centre was trying to evade its responsibility on this score. The Union Government was arguing that in this case the cost-benefit ratio should be taken into consideration. But, Mr Halim's counter-argument was that since the area was in the proximity of an international boundary and it was densely populated with a very fertile soil, the cost-benefit ratio should not be taken into consideration in this case.

The loss of land and home-sites due to erosion with the simultaneous accruing of land on the Bangladesh side of the border was creating law and order problems in the two districts, he disclosed.

The Board has requested the State Government to furnish some additional information and the details would be submitted within a month. Mr Halim added.

CSO: 5000/7063

EROSION TERMED WORST FOE OF INDIAN AGRICULTURE

New Delhi PATRIOT in English 13 Aug 81 p 2

[Text] IT has often been claimed by the experts that India is self-sufficient in agricultural production and has a bright future in the field. The Government has also claimed at various times that self-sufficiency has been achieved and the farm produce is often exported, earning large amounts of foreign exchange. But a thorough study and scrutiny of these claims would establish that much remains to be done.

It is true that the peasants and the Government are doing their best, but Nature and the soil have still much to offer. The main hindrance to agricultural production today is not so much lack of fertilisers or irrigation facilities as soil erosion, which has, for billions of years, deprived man of his reward. Day in and day out he toils on the land but earns little. Every year the country suffers because of soil erosion; production on farms goes on decreasing; the area of cultivable land gets reduced; and finally, there are famines, drought and pestilence.

Soil erosion turns alluvial land into unfertile and unproductive desert, or saline, alkaline and equally unproductive tracts. It is estimated that as much as one-third of the total cultivable area in the country is lying fallow and a quarter of the non-agricultural land is being wasted these days because of soil erosion. Three-fifths of the agricultural land is also water-logged and has become saline. According to one estimate, 266 million hectares of land needs dire attention, because it has become unproductive. This is a frightening picture.

Soil erosion has done extensive damage in Uttar Pradesh and Rajasthan, and in Punjab too it has choked irrigation courses. Valuable fertile land has been turned into worthless gullies carved out of the soft mud by the Jamuna, Chambal and other rivers. Rampant erosion has damaged a vast area of land in Madhya Pradesh, Rajasthan and Gujarat.

In the Yamuna-Chambal basin, the tangle of wild and sterile ravines have become the hideouts of robbers. In other parts of northern India too, the deep alluvial and fertile soil has been converted into unseless ravines. In West Bengal, Bihar and Maharashtra, much havoc has been caused by the rivers. Wind has also caused enormous damage in Punjab, as also in Jodhpur, Bikaner and many other districts of Rajasthan. Wind breaks the trees, hedges and grass. The greenery disappears, and is replaced by dust.

Close observation, detection and precautions are needed to stop soil erosion. Denudation or the cutting away of soil particles in the land by natural agencies like rain, running water, the wind and sea waves are responsible for this phenomenon.

If the rain forcefully strikes the surface and the showers are concentrated, the soil can be eroded quickly, loosening the particles and forming deep ravines. On steeper slopes the soil is quickly washed away. Light and open soils lose more silt, whereas black and wet soil do not wash away easily. Soft shale and sandstone erode more rapidly than limestone and granite. (Erosion in the Shivalik region is more pronounced than in Delhi.) If the ground is bare of vegetation, and does not absorb rain water, soil erosion occurs quickly.

Sheet erosion is where an entire layer of soil is removed from the hill slopes or from those uncultivated lands where grazing or fire has occurred, or where trees have been indiscriminately cut and burned. In this case finger-shaped grooves appear over the entire area. In other cases, rain water forms small rivulets, washing away the soil from gullies. This then goes on extending over the area.

Primarily, river systems cut down into elevated plateaus and carve out intricate patterns of gullies. In India, floods are a common phenomenon every year. Inundated rivers undercut the banks and erode the beds. The force of the water also carves into the banks and results in erosion.

The wind also carries away the soil in short bounces. Small particles of soil are carried long distances, suspended in the air. Ultimately, when they become too heavy, these particles are scattered along the surface. Experts often say that Nature builds one inch of topsoil in about two thousand years and man frequently destroys it overnight by indiscriminate use. Floods, failure of rains, diseases, wars, famine and change of natural drainage system too affect the soil badly.

Erosion by sea waves is also a major problem and has recently assumed rather alarming problems in some parts of the coast in Kerala and Maharashtra.

Deforestation is the greatest cause of soil erosion. Man may cut trees for timber and fuel supply resulting in absence of seepage and storage of water in the soil. The structure of soil cannot sustain water. Instead, the water loosens the soil and transports it. This also contributes to floods. In contrast, in the case of natural forests, tree roots go deep into the soil and penetrate into the cracks. The intensity of rain is broken by the tree leaves and the carpet of vegetation soaks the water like a sponge, which later on emerges as a stream somewhere else. The absorption of rain reduces flood violence.

Plants, even grass, also protect the soil, but overgrazing of land destroys it. When the rain strikes such a tract of land directly, the soil pores are clogged with mud and the run-off of the water is enhanced. It leads to the deterioration of the botanical composition of the soil. Weeds and bare ground increase.

In the case of shifting cultivation, a piece of land is selected in a forest. The trees are cut and the field is cultivated. This process continues for years and every year the fertility of the soil goes on diminishing. Such a phenomenon is common in the Himalayan foothills, Assam and Madhya Pradesh. Ploughing on the unstable slopes has also resulted in soil erosion. On steeper slopes, the cultivation yields less prolues every year.

Soil erosion is the greatest menace facing our agriculture. It reduces the life expectancy of irrigation projects. Alternative sites are not easily available because there is high rate of sedimentation. This not only results in loss of irrigation and power potential, but it also causes extensive floods every year. Water resources also dry up.

This degeneration of land has to be stopped at all costs. There is need for the early setting up of a special Central agency to detect and monitor such degeneration and coordinate efforts to tackle it. All damage due to deforestation, water-logging and floods should be reported to this agency.

Diversion of good agricultural land for urban and industrial uses must be stopped. The land with inferior or unproductive soil could be used for such purposes. Deforestation also must be stopped. In fact, more forests need to be grown, under rogrammes such as the one inaugurated by the Prime Minister, Mrs Indira Gandhi, in Rajasthan.

Afforestation of the top slopes and catchment areas has been recommended to halt soil erosion. Grass should be grown on the upper slopes too. Terracing system of agriculture should be adopted. Strip cropping, contour cultivation and protective farming is advised. The land should absorb all the rain water. This will reduce soil erosion. Trees can help in this objective. Afforestation of the catchment areas of the rivers will increase the life of dams and reservoirs, thus obviating floods and soil erosion.

Flood control is a must. As part of this, the level of low-lying villages should be raised and small dams erected around them. Diversion ditches are also recommended.

Soil-binding crops like grams, bajra, jowar, peas and fodder can reduce soil erosion. Tobacco, cotton, maize, 'arhar' and potatoes should not be grown on the land where soil has been eroded.

Grazing may be allowed in forests by rotation after a gap of five years or so. Goats cause much damage.

In short, soil erosion must be stopped at all costs. It is a colossal job. While the Sixth Five Year Plan has made substantial provision for this and effective measures are being taken already, the problem cannot be solved without the active participation of the masses. Let us all cooperate in this mission which is essential for our economy.—PTI Feature.

CSO: 5000/7064

BRIEFS

SALINITY RESEARCH PROJECT--Bhavnagar, Aug 6 (PTI)--The International Foundation for Science (Sweden) has sanctioned 10 000 US dollars (Rs 77,000) for the first phase of the research project on reclamation of saline soils, submitted by Dr A J Joshi of the Sir P P Institute of Science affiliated to the Bhavnagar University. The principal of the institute Dr A R Parekh told newsmen here yesterday that under the programme Dr Joshi would study the salinity problems of saline soils in Gujarat and Western India and would examine possibilities of introducing plants having economic potentiality on such soils. Dr Joshi was the seventh Indian to receive the grant for such research projects from (IFS) one of the largest scientific foundation in the world having its member organisations in 53 countries according to Dr Parekh. [Text] [New Delhi PATRIOT in English 7 Aug 81 p 5]

CSO: 5000/7062

NEW ZEALAND

CABINET TO INTRODUCE CLEAN AIR, NOISE ABATEMENT BILLS

Wellington EVENING POST in English 14 Jul 81 p 32

[Article by Karen Brown]

[Text] Legislation leaving the power to control neighbourhood noise largely with local authorities rather than the police is to be introduced this session.

Cabinet yesterday considered papers concerning a noise bill and a clean air amendment bill which are both planned for introduction this session, a spokesman from the office of the Minister of Health, Mr Gair said today.

The Government first indicated it would introduce noise legislation this year when the Labour Opposition introduced a neighbourhood noise control bill last month.

Then Mr Gair said that the Government's bill — likely to supersede the Labour one — would leave power to control neighbourhood noise with local authorities where it rests at present.

The Labour bill, introduced by the shadow cabinet minister of health, Dr Michael Bassett, proposed that much wider powers be given to police to cope with the problem, which, it was said, local government could not handle.

Mr Gair's spokesman said today that the noise bill was in its final drafting stages and would be introduced into Parliament this session for referral to the health and welfare select committee in conjunction with the Bassett bill.

It would keep the power for noise control enforcement in the local body area.

And, the clean air amendment bill also for introduction was "in its initial (drafting) stages" and would strengthen the Clean Air Act.

CSO: 5000/9040

PARLIAMENT DEBATES MAJOR CHANGES IN MINING BILL

Response to Public Concern

Wellington EVENING POST in English 17 Jul 81 p 4

[Article by Rae Lamb]

[Text] A government bill making major changes to mining legislation and incorporating environmental considerations was subjected to close scrutiny when it was introduced in Parliament yesterday.

The Minister of Energy, Mr Birch, was questioned at length by Labour MPs about various clauses in the 21-page bill, and the Social Credit MP, Mr Carry Knapp, labelled the bill as inadequate.

Sen as the Government's response to public concern at the adverse environmental effects of mining, particularly in the Coromandel area, this bill eliminates the automatic right of the holder of a prospecting licence to obtain a mining licence.

The Mining Amendment Bill also gives greater opportunity for local and public participation in the assessment of the effects of mining.

The bill, which is to be effective from October 1, names the Planning Tribunal rather than the minister as the final arbiter on objections related to the granting of mining privileges.

It provides for an environmental assessment to accompany applications for mining or prospecting licences, and adds a new condition to be attached to prospecting licences. The condition that all necessary steps be taken to prevent damage to areas of scientific, wildlife, fishing or historic interest.

Under this bill the minister must have regard to, among other things, environmental and social factors when granting a mining licence.

It also enables the Planning Tribunal to call the Commissioner for the Environment to give evidence in respect of the environmental impact reports.

Mr Birch told Parliament it had been necessary in this bill to take a "middle course" bearing in mind the importance of maintaining a viable mining industry in New Zealand.

Applications that had already been made for mining licences would not be affected by this bill. There were about 24 such applications.

Mr Birch said this bill tied mining legislation more closely to the provisions of the Town and Country Planning Act.

Labour's spokesman on energy, Mr Tizard, queried the time frame and approach of the bill. Other Labour MPs questioned the role of the Commission for the Environment, the clauses relating to bonds and rental, the relationship between this bill and the Town and Country Planning Act, and the definitions of prospecting and mining.

Pressure

Mr Knapp said the bill was the result of tremendous pressure by people who saw the inadequacies of the current legislation as protection against foreign interests wanting to "tear the heart" out of New Zealand's wealth of mineral resources.

He said the definition of "prospecting" in the bill was not tight enough and it could still allow de facto mining.

The Minister for the Environment, Dr Ian Shearer, added his voice to those of Government MPs who spoke in support of the bill.

Replying to a question raised by Labour's shadow minister for the environment, Mr Moore, Dr Shearer said the Commission for the Environment had been given the right to speak on matters contained in the bill with an independent voice.

The bill was referred to Parliament's commerce and energy select committee for consideration.

Mining Companies Secrecy

Wellington EVENING POST in English 22 Jul 81 p 6

[Text] The habits of secrecy of mining companies were deeply ingrained and there were more rumours about their activities than facts, the Commission for the Environment said in its annual report.

The report, tabled in Parliament yesterday, criticised the actions of one or two mining companies which have refused to give out information about projects. One company gave notification of a proposal on Christmas Eve, 1980, when the 21 days allowed for objections coincided with annual holidays.

The report describes this as an unfortunate episode which, while an isolated action, typified the attitude of mining interests.

"Overseas firms need to know in particular that in New Zealand it is expected that the communities affected will be treated with sensitivity and given something more substantial in terms of facts than a burst of public relations."

The commission defended its role as an agency which carried out independent audits of environmental reports and at the same time advised the Minister for the Environment.

It admitted that this was an unusual role, but pointed out that while ministerial accountability covered policy matters, advice on policy was not something for which a department should be openly accountable.

The report also considered the question of the danger to wild and scenic rivers from hydro-electric projects. It said that the final shape of legislation designed to protect these rivers will be a measure of New Zealand's sensitivity to key environmental issues.

CSO: 5000/9040

ENVIRONMENT MINISTER URGES CONSERVATION PLUS DEVELOPMENT

Backs Environmental Groups

Wellington EVENING POST in English 22 Jul 81 p 28

[Text]

THE MINISTER for the Environment, Dr Ian Shearer, has suggested that environmental groups should be paid for the advice they offer when major development projects are proposed.

In an address to a meeting of the Royal New Zealand Forest and Bird Protection Society in Wellington last night he said the big increase in major projects in recent years had seen environmental groups voluntarily taking on extensive research, litigation and publicity work.

This had all been done in the public interest and at great cost to themselves in terms of money, time and energy.

"Clearly the amount of good advice I receive will be greatly influenced by the degree of financial stability of the organisations supplying that advice."

Funding

Dr Shearer said alternative methods of funding could include payment for professional and technical expertise on a contract basis, payment for administration, or funding through the proposed 2 percent conservation levy on the capital cost of all major new industrial projects.

On the conservation levy, he said environmental damage was a cost which industry imposed on the community in the long run. The community, therefore, had a right to expect industry to bear its share of these costs without in any way exonerating it from normal environmental safeguards.

"There is no need for New Zealand to accept the same environmental costs of industrialisation that other countries accepted — largely in ignorance — in earlier decades."

He said there could be no sustainable growth in this country until conservation was fully integrated with development. The single-track push towards development was undercutting the base of this development.

"New Zealand's primary production depends on protecting soils which are often infertile and unstable . . . three quarters of our land area shows signs of erosion.

"Just as alarming is the threat to the coastal wetlands that help underpin our expanding fishing industry.

"Worrying also is the fact that over 500 of our plant, bird and animal species are now in danger of extinction and that natural and wild areas are in danger of being lost to hydro and geothermal development."

Quoting from the recently released proposal for a New Zealand conservation strategy, he said: "Unless patterns of development that also conserve resources are widely adopted, it will become impossible to meet the needs of today without prejudicing the achievements of tomorrow.

"Past failures to come to grips with this philosophy have kept conservationists extremely active in recent years. It has been more an exercise designed to rectify earlier mistakes than to ensure a conservation of resources."

'Enough'

Dr Shearer said it was time to say "enough" when resources were depleted to such an extent that only desperate measures had to be applied.

He said there was a critical need for conservation to be integrated with development as the country moved into major expansions of agricultural, forestry, fishing, manufacturing and energy industries.

Environmental considerations had to be integrated into the earliest stages of the planning process of big projects and not simply tacked on as an afterthought after the main siting, engineering and financial decisions had been made.

Dr Shearer also defended the Commission for the Environment which has recently come under attack for commenting on the social and economic impacts of projects.

He said this controversy was a healthy sign and meant the commission was doing its job.

"There are a number of large projects, some of which involve new processes for New Zealand, and some of which are contentious. It is inevitable that the environmental evaluation of such projects would bring out fundamental differences relating to resource use," said Dr Shearer.

Warns of Endangered Species

Christchurch PRESS in English 14 Jul 81 p 2

[Text] PA Wellington

More than 500 New Zealand plant, bird, and animal species were in danger of extinction, according to the Minister for the Environment (Dr Shearer).

Some species — including rock lobsters in Tasman Bay, trevally in the Bay of Plenty, and snapper in the Hauraki Gulf — were being over-exploited said Dr Shearer yesterday at the launching of the Nature Conservation Council's proposal for a New Zealand conservation strategy.

The proposal was described by the Minister as an attempt to find middle ground in the conflict between development and conservation. He welcomed its plan for a Protected Habitats and Species Bill, modelled on the American Endangered Species Act of 1973.

Dr Shearer noted that less than 10 per cent of New Zealand's original freshwater wetlands remained free from development.

He also said New Zealand was now developing air pollution problems that were beginning to match, in cities such as Auckland, and Christchurch, those in some of the world's main industrialised nations.

"In Christchurch, for example, motor-vehicle exhausts have caused lead concentrations in rainwater that are exceeded only in some of the bigger American cities."

Dr Shearer said the search for mutual agreement between development and conservation interests would require changed attitudes on both sides.

This was necessary to get away from the dangers of "over-utilisation of resources" or a "total lack of development."

The Minister of Lands (Mr V. S. Young) also spoke at the function about "seeking the balance" between views. "There is no solution to be found in a regular polarisation of views," he said.

It was a short-sighted person who read through the night about the extravagances of hydro-electric schemes, said Mr Young. "There is also a degree of thoughtlessness that wings people around the world to never-ending conferences concerned with the exploitation of fossil fuels."

With considerable economic growth and use of resources just around the corner, it was appropriate that the strategy should be discussed. "We need rational and unemotive debate on the development issues New Zealand is now considering," Mr Young said.

The strategy followed the world conservation strategy launched in March. This one was a "New Zealand document designed to promote New Zealand solutions for New Zealand problems for the benefit of present and future New Zealanders."

The chairman of the Nature Conservation Council (Dr Carolyn Burns) chaired the meeting. She said that the strategy was a proposal. Public submissions would be accepted up to August 31.

The strategy and a review of the public submissions would be presented to the general assembly of the International Union for the Conservation of Nature and Natural Resources in Christchurch in October.

After the general asssembly, the proposed strategy, the review of submissions and a report of assembly discussion will be forwarded to the Minister of Lands for the Government's consideration.

CSO: 5000/9040

ENVIRONMENTAL GROUPS LOSE COURT CASE AGAINST SMELTER

Wellington EVENING POST in English 15 Jul 81 p 4

[Text]

THE Government's decision to place the Aramoana aluminium smelter proposal on the fast track of the National Development Act was not invalid, the Court of Appeal has held.

The court today unanimously dismissed two applications for a review of the Executive Council's decision last April to use the fast track procedures of the Natural Development Act to approve establishment of a smelter by South Pacific Aluminium Limited.

The first application was by the Coalition for National Economic and Environmental Development in New Zealand and Mr Gary John Holden, a property owner at Aramoana.

The second was by the Environmental Defence Society and the Royal Forest and Bird Protection Society of New Zealand.

In the first application separate judgments were delivered by each member of the court, Mr Justice Cooke, Mr Justice Richardson and Mr Justice McMullin.

Mr Justice Cooke said there was no evidence of fraudulent misrepresentation as alleged. There was nothing in South Pacific Aluminium's application to suggest the company did not have an honest belief as to the benefits of the smelter.

Controversy

The whole proposal was a controversial one on which strong opinions were entertained on both sides. But to allege fraud was to go too far, he said.

As regards natural justice, the judge said he accepted that some aspects of the National Development Act would in practice cut down opportunities for property owners to object. But streamlining procedures were the very purpose of the Act.

Rejected

Mr Justice Cooke also rejected allegations of predetermination on the part of the Government.

"It is right to add that in my view, although some of the grounds in the statement of claim were wholly untenable, the economic and scientific evidence filed by the plaintiffs and uncontradicted by any evidence filed by the respondents was such as to make it reasonable for the plaintiffs to bring this case," he added.

In the second application a single judgment was delivered on behalf of the court by Mr Justice Cooke.

The Government action had not been shown to have been unlawful, the judgement said.

CSO: 5000/9040

SYNTHETIC FUEL PLANT ACCEPTS MOST AUDIT RECOMMENDATIONS

Wellington EVENING POST in English 28 Jul 81 p 10

[Text]

NEW PLYMOUTH, July 27 (PA). — Most of the Commission for the Environment's recommendations on the proposed Motunui synthetic petrol plant are acceptable to the New Zealand Synthetic Fuels Corporation.

Dr Colin Maiden, chairman of the corporation's joint executive committee, said this in a statement released in New Plymouth to meet the commission's request that the corporation make a public statement before the Planning Tribunal hearing on recommendations in the environmental impact report audit.

Of the 41 recommendations in the audit, 25 were directed at the corporation and had been the subject of further clarification and discussion with the Commissioner for the Environment, Mr Ken Piddington, Dr Maiden said.

Noise levels

The corporation had given the recommendations careful consideration and, subject to some reservations and the need for further clarification on the practicability of a number of them, most of the audit recommendations addressed to the corporation were acceptable.

The corporation did not fully accept the commission's recommendations on noise standards.

Dr Maiden said the corporation had undertaken a major review of noise abatement measures and had concluded the noise levels predicted in the environmental impact report could, at considerable cost, be further reduced.

"The commission's recommended 45dba night-time standard has been accepted as a design goal for the plant, but in view of the technical complexity and costs of further noise abatement measures it was considered essential by the plant's designers to have some reasonable flexibility in attaining this goal."

Liquid effluent disposal would be the subject of recommendations by the Planning Tribunal following consideration of the corporation's water right application to discharge from a marine outfall adjacent to the plant site.

In view of this, the corporation could not accept the commission's recommendation that the plant effluent goes to Waitara.

Dr Maiden confirmed details of environmental protection measures which would be incorporated in final plans for the proposed plant.

These measures were the outcome of the corporation's ongoing environmental investigations as well as discussions with Motunui residents, Clifton County Council, Taranaki catchment commission and local government and statutory authorities, including the Commission for the Environment.

He reiterated the environmental impact report, published in February, was only one point in a continuing process of environmental investigation.

Evidence

Since February, extensive work had been carried out in preparing detailed evidence, which would be presented at the tribunal hearing, due to begin in New Plymouth on Tuesday next week.

Copies of most of this evidence had been circulated to all other parties to the hearing.

Dr Maiden hoped the expert evidence now available would allay any remaining fears that the plant would have unacceptable impacts on the environment.

Since publication of the audit in June, the corporation's environmental investigations and discussions with statutory authorities had addressed many of the matters raised by the commission in considerably more detail than was possible in the corporation's environmental impact report.

In a number of areas, the commission's recommendations simply duplicated, or had been superceded by, the requirements likely to be requested by statutory authorities reporting to the planning tribunal, he said.

Monitoring

For example, the commission's recommendations on environmental monitoring had since been the subject of detailed discussions with the Clifton County Council, Taranaki Catchment Commission and the Health Department.

Specific responses by the corporation to the commission's recommendations include:

- The general principle of environmental monitoring, addressed by at least five of the commission's recommendations, was accepted, but detailed obligations were yet to be determined.
- The corporation has agreed in principle to the demarcation of a coastal reserve on the northern boundary of the plant site. The precise location, size and legal status of such a reserve

would be a matter for further discussion with Clifton County Council and the Department of Lands and Survey.

- The corporation has agreed to protect historic and archaeological sites identified by the Historic Places Trust. These will be fenced before construction and, after construction, will be generally accessible to the local Maori people or interested members of the public. The corporation will have further discussions with the Historic Places Trust over the funding of investigations on the site prior to or during the construction period.
- It is willing to co-operate with any local or regional government group which may be established to co-ordinate research projects into the social impacts of petrochemical plants in the region.
- The corporation will continue discussions with the Fire Servces Commission to finalise fire protection measures. These discussions will include establishing "hot fire" training areas.
- Transportation of lead compounds to the plant is no longer an issue because the Government has decided to ship synthetic petrol as a blendstock to the Marsden Point refinery.
- Drift eliminators are already incorporated in the plant cooling tower design to ensure that any drift falling off the site will not have adverse environmental effects.
- The corporation will landscape the plant site, incorporating suggestions outlined in the commission's recommendations.

CSO: 5000/9040

BRIEFS

ALUMINUM SMELTER CHALLENGES--Auckland, July 17 (PA)--The Environmental Defence Society believes it has established an important principle in its litigation against the government placing of the Aramoana smelter project on the "fast track" planning procedure. Although the Court of Appeal overruled the society objections to the decision, the society says it has shown that the legality of cabinet decisions can be challenged. "It is a significant move forward in recognising that public interests can challenge the executive," said the executive officer of the society, Mr Gary Taylor. Mr Taylor said the society would decide in the next two weeks whether to make submissions on the smelter to the Commission for the Environment and the Planning Tribunal. [Text] [Wellington THE EVENING POST in English 20 Jul 81 p 23] Dunedin, Today (PA)--The anti-smelter organisation Creednz has filed a second legal action in the High Court at Dunedin to try to stop South Pacific Aluminium Ltd from proceeding with the smelter at Aramoana. The Coalition for Rational Economic and Environmental Development in New Zealand is seeking a declaration that the streets and service lane in Aramoana village are public, and have been so dedicated at common law. It also seeks an injunction to restrain the Otago Harbour Board or the aluminium consortium from doing any act which prevents public right of passage over the streets. [Text] [Wellington THE EVENING POST in English 24 Jul 81 p 6]

NEW ENVIRONMENTAL GROUP--Whangarei--The newest environmental watchdog in the North is the Northland Alliance for Responsible Development. An informal group began work about three months ago, but on Friday night the group held its inaugural meeting as an incorporated society. About 30 people attended the meeting which was addressed by the executive director of the Environmental Defence Society, Mr Gary Taylor. The president of the alliance, Mr Derek Keene, said it would look at such issues as mining, maritime and regional planning, horticulture, the lead content in petrol and development such as the forestry port at Marsden Pt. The group has already made a submission on the proposed port model which, it says, should include water-quality tests. Mr Keene said the alliance could also be involved in the regional planning scheme which will be released by the united council this week. [Text] [Auckland THE NEW ZEALAND HERALD in English 21 Jul 81 p 8]

CRITIC OF ENVIRONMENTALISTS--Rotorua--Plans to prevent development on some scenic rivers are not looked at favourably by the chairman of the Rotorua Area Electricity Authority, Mr H. A. Mills. "I cannot but view with concern the move afoot to designate many waterways as wild rivers, thereby effectively removing them . . . as potential producers of hydro-electric power," Mr Mills said in his annual report. "Before any such restriction becomes law, individual river proposals should be strictly and thoroughly scrutinised and elements of emotionalism (and sometimes sectional selfishness) should be kept in proportion." Mr Mills said he respected the sincerity of environmentalists and the good they had done over the years but rigid attitudes sometimes did their cause more harm than good. "An adequate supply of hydro-electricity must still remain a major contribution towards the solution of New Zealand's energy problems of the future. "It is either that or think nuclear and our environmentalists cannot keep their cake and still satisfy their everyday appetites that go with modern living." [Excerpt] [Auckland THE NEW ZEALAND HERALD in English 21 Jul 81 p 2]

CSO: 5000/9041

ENVIRONMENTAL PROTECTION WORK DURING READJUSTMENT OUTLINED

Peijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 1-3

[Article by special commentator: "Environmental Protection Must Progress During Readjustment"]

[Text] Recently, the State Council issued a "decision concerning the strengthening of environmental protection work during the period of readjustment of the national economy." This fully shows the emphasis the party and the government have placed on environmental protection work. Readjustment of the national economy is the central task of the whole nation at present. Environmental protection work must insist on implementing the policy of readjustment and progress during readjustment.

For a long time, because of the lack of understanding of environmental problems and the leftist mistakes in economic work, an imbalance was created between the buildup of production and environmental protection, and this has become an outstanding problem in the development of the national economy. Therefore, during the period of readjustment, conscientiously implementing the State Council's "decision," truly including environmental protection work in the road of readjustment of the national economy, and correctly solving the relationship between economic readjustment and environmental protection are the major tasks facing the environmental protection front.

At present, the actual problem we face is that the state's finances are encountering difficulties, and it is not possible to allocate a lot of capital to manage and control pollution and solve the environmental problem. But viewed from another direction, the various policies and measures of readjustment of the national economy all include a large content of environmental protection; they are beneficial to controlling pollution and protecting the environment. Starting out from this basic situation, the general guiding ideology in environmental protection work during the period of readjustment is to do what one is capable of, establish environmental protection work on the basis of less expenditure and more work, and take an active attitude so that environmental pollution and environmental destruction can be controlled in some important ways through readjustment, and some outstanding problems of pollution can be solved to improve our nation's environmental conditions.

In the readjustment of the national economy, can we lessen the damage from pollution by a greater degree without spending money or spending little money? Looking at the experience of many regions, we believe it is possible. The key is to include environmental protection in the readjustment of the national economy, plan it uniformly, and combine it with readjustment in order to reduce pollution and improve the environment.

First, environmental protection must be combined with reduction of the scale of capital construction in order to control the development of new polluting sources. The keystone of the readjustment of the national economy is to solve the problem of an overly long battlefront in capital construction. During the course of reducing the scale of capital construction, environmental protection departments must actively participate in the cleanup work of ongoing capital construction projects. They should make suggestions concerning readjustment based on rational distribution and environmental effects to stop those construction projects that are not rationally planned, that seriously pollute the environment and that do not have effective control measures. Feasibility studies of large and medium-size construction projects that are newly built or expansion projects must be intensified and the reporting and approval system of the "environmental effects report" must be stricIty implemented, effective systems and methods of control must be established, and the key measure of "three simultaneous efforts" must be grasped well. At the same time, management of the construction of small enterprises, and commune and brigade enterprises, street enterprises, joint agricultural, industrial and commercial enterprises must be strengthened. Effective policies and measures must be taken to actively encourage the development of nonpolluting professions that serve city life and to strictly control the development of professions that create pollution.

Second, environmental protection must combine with industrial readjustment to reduce environmental pollution. In readjustment, some plants and enterprises should be closed down, terminated, combined, or transferred. This is beneficial to improving the planning of industries in cities, rational utilization of resources and energy resources, and reducing the pollution of the environment. Environmental protection departments should cooperate closely with this work, grasp tightly the work of surveying plants and enterprises in residential areas, protected areas of water sources and scenic and tourist areas. All enterprises that cause serious pollution, produce noise and cause serious vibrations and conflict with the masses sharply and cannot be controlled should be closed down, terminated, combined, or transferred via industrial readjustment, reorganization and merging, and the key is combining and transferring.

Third, environmental protection must combine with the technical reform of enterprises, actively urge the old enterprises to control pollution. According to the policy of readjustment, the future development of industry will rely mainly on the technical reform of existing enterprises. At present, our nation's industrial technology is relatively backward, the consumption of resources is large, the economic results are poor, pollution is serious. Therefore, control of pollution by old enterprises must be tightly combined with technical reform centered around conservation. We must use nonpoisonous or less poisonous raw materials, nonpoisonous or less poisonous technologies in the process of conversion of resources and energy sources and in production technology to eliminate polluting factors in the production process, and while pushing forward technological reform and renovation of facilities of enterprises, we must solve the problem of environmental pollution to realize a unification of environmental results, economic results and results of conserving energy. Industry's "three wastes" are fundamentally a waste of resources and energy sources. We must implement various kinds of policies of encouragement and develop the comprehensive utilization of the "three wastes" of industry in a big way, reduce the wasting of resources, increase the wealth of society, and reduce pollution of the environment.

One important reason for our nation's environmental pollution and destruction is poor management. We must urge the plants and enterprises to include strengthening environmental management in their production management; establish a responsibility system and a reward and punishment system for environmental protection; strengthen supervision by the masses; eliminate running, spewing, dripping, and leaking; develop civilized production and activities for "clean plants"; utilize legal, economic and administrative means to restrain plants and enterprises externally; and urge enterprises to reduce pollution of the environment. Starting this year, we must implement the system of retrieving waste from released pollutants nationally, and we must conscientiously summarize the experience in this regard so as to promote it more widely.

Fourth, environmental protection must combine with city planning and construction to gradually imporve the environment in the city. During the period of readjustment, the state must gradually strengthen construction of urban dwellings, city administration and public construction, culture, education and public health, commercial networks, and greening of the cities, and readjust the proportion of "bones" and "flesh." Environmental protection departments must actively coordinate with the city's construction departments to do the work of overall planning and comprehensive planning of various projects in city construction, establish plans for the control and management of the city environment, do the work of rebuilding old sections of cities and greening of cities according to plan and step by step, undertake well the centralized supply of heat, and popularize civilian use of gas to improve the city's environment. Newly built satellite towns, industrial zones, and residential zones must do the work of environmental planning well from the start of construction, utilize the method of supplying heat for large territories or supplying centralized heat by using scientific planning, rational economy, advanced technology, and avoid regression.

We must do well the work of environmental protection in the capital, Beijing, as well as in Hangzhou, Suzhou, and Guilin. Beijing is the capital of our nation; it is the center of communications between China and the other nations of the world. Environmental protection here must lead the nation. This requires conscientious study and implementation of the four suggestions regarding construction for the capital proposed by the Central Secretariat; we must do well the work of planning city construction and controlling the environment, take forceful measures and positive actions, and exert efforts to produce visible improvement in the environment within 3 to 5 years to build Beijing city into a beautiful, clean and first-class modern city according to plan and step by step.

In Hangzhou, Suzhou and Guilin, our nation's famous scenic tourist cities, we must plan well according to the nature and characteristics of the cities, take measures, exercise strict control, prevent destruction of natural scenery and historical ruins, and gradually restore scenic places that have been damaged.

Fifth, environmental protection must combine with readjustment in building up agriculture, forestry and water conservancy, and strengthen management of the natural environment. Protecting the natural environment is an important duty of environmental protection departments. They must conduct surveys and studies according to plan, understand the situation, and gradually develop work in this regard. At present, they must especially prevent damage to forest resources and water and soil resources, pay attention to reviewing the environmental effects of large and medium water conservancy projects and the use of water in construction projects; they must prevent blindly encircling lakes, filling in rivers and overexploitation of underground water which are activities that destroy water resources; they must maintain the natural ecological balance and promote the good cycle of agricultural ecology. They must do the work of zoning natural protective regions well and gradually establish and expand the various types of natural protective regions according to actual need and the possibilities so that the natural environment of our nation's representative natural ecological systems, the original regions of precious wild life animals and plants, important natural historical grounds and scenic places can be properly protected. To rationally develop and utilize our nation's territorial resources in the period of readjustment, we must organize and develop the study of environmental economics and natural territorial economics, strengthen the comprehensive survey of national territorial resources and overall socioeconomic investigations, create conditions, and gradually develop our nation's planning work for the control, management, development and utilization of our nation's territory.

Environmental protection is a new field, it has started late, its foundation is weak, it has little experience, it is in a founding stage. The task of developing this field is glorious and difficult. During the period of readjustment, we must exert efforts to build up the environmental protection departments themselves so as to establish a foundation for the development of environmental protection in the future.

First, we must grasp tightly the building of environmental monitoring stations of all levels and form working capabilities as quickly as possible. We must survey the sources of pollution well, and by monitoring and evaluation we must clearly check the environmental quality of some key regions and water regions and establish a system of "environmental quality reports."

Second, we must develop environmental scientific research work. We must concentrate forces to establish well the first-level provincial scientific research agencies that have better conditions and gradually develop the specialized uniqueness of each agency. We must arrange scientific research plans according to the characteristics and actual needs of our nation's environmental protection and produce scientific research results.

Third, we must speed up the training of talent. We must do the work of staff education well, carry out on-the-job operations training of personnel well, and exert efforts to elevate their ideological level, technical level, and management level. At the same time, we must include the training of special talent in environmental protection in the nation's educational plans and popularize environmental education throughout the society. We must recognize that this affects long-term environmental protection work.

Fourth, we must establish and make sound the various environmental laws, regulations, and standards, and quickly establish a system of environmental laws, regulations and standards which take into account our nation's unique characteristics and which suit our nation's national situation.

During readjustment, environmental protection work will encounter many difficulties and conflicts; the ideological and political work must be strengthened to further mobilize the enthusiasm and creativity of the broad numbers of cadres and scientific and technical personnel on the environmental protection front. Environmental protection is the business of all the people; it is not something that the environmental protection departments can complete on their own. We must be skilled in coordinating with each department and each sector closely, strengthen coordination and cooperation, exert mutual efforts to do the work well to hasten the development of our nation's environmental protection work and make new contributions to the construction of the four modernizations!

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LEVEL OF ENVIRONMENTAL SCIENTIFIC RESEARCH ANALYZED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 3-6

[Article by Guo Fang [6753 2455]: "The Task of Environmental Scientific Research During the Period of Readjustment"]

[Text] At present, we face the great task of readjusting the national economy. That which must be withdrawn must be withdrawn, that which must be carried out must be intensified. Education, science, culture and health must continue to develop as much as possible, the results of economic work must be improved in each aspect and the people's livelihood must be improved. Therefore, readjustment is an active policy. Temporary and partial retrenchment is the road to a steady, healthy development of the national economy. During this period of major readjustment, how should environmental protection be readjusted? What is the task of environmental science and technology? This is also a question that people are concerned about. I would like to present some views regarding this question.

I. We Must Realize Coordinated Development of Economic Construction and Environmental Protection Through Readjustment

To carry out the four modernizations we must have a correct guiding ideology. We must start out from the actual situation of China. The actual situation of our nation is: socialism; a large population; of the 1 billion population, 800 million are farmers; the foundation is weak; the level is low; the territory is extensive; we have a long history; the natural types are complex. The people of the whole nation, under the leadership of the Communist Party, have build a relatively complete economic system after 31 years of construction; they now have 400,000 enterprises, fixed assets of industries have increased over 20 times, and a serious environmental problem has emerged.

The environment includes the atmosphere, bodies of water, land, mineral deposits, forests, wild animals and plants, natural protective regions and scenic and tourist regions. It is the basic condition of the nation's natural resources and the people's life. Therefore, protecting and improving the environment are the foundation of economic and social development. They are also the condition to assure and improve the work and rest of the people. The socialist system can rationally develop and utilize natural resources through planned economy to assure economic development while protecting the environment. But because we were influenced by the leftist mistakes, we understood the problem of environmental protection relatively late, we did not do the work of comprehensively balancing the national economy, and thus an imbalance was created. We neglected the protection, improvement and optimization of the environment in the relationship between construction for production and environmental protection, in the relationship between science and technology and the coordinated development of the economy and society, the relationship between handling of accumulation and consumption, in development and utilization and protection of natural resources, in controlling the scale and direction of investment and the rational arrangement of the structure of the production enterprises of capital construction and regional planning, and in the consumption of energy sources, raw materials, materials and business management. At present, environmental pollution and the destruction of natural resources are fairly serious. This problem must be placed in its proper position and correctly solved through this economic readjustment. Otherwise, if the situation is allowed to develop further, it will surely affect the people's lives, hinder construction for production, and cause countless disasters later.

II. We Must Utilize the Good Opportunity of Readjustment To Strengthen Environmental Protection Work

The environmental problem does not concern just environmental pollution: it also includes the destruction of natural resources. Destruction of the environment is caused by natural disasters and it is also caused by man. Natural disasters such as earthquakes, eruption of volcanoes, windstorms, drought and flood, disease and insect pests all create serious destruction of the environmental ecology. We grasped this problem early; after liberation, the state concentrated manpower and materials to develop scientific research and took effective measures and carried out prevention; for example, building water conservancy projects in a big way, destroying and eradicating locust, preventing blood fluke and regional diseases, forecasting disastrous weather, controlling sand and alkalinity, preventing the flow of mud and rocks, controlling the sinking of the ground surface, retaining water and soil, forecasting earthquakes etc, have all shown results. We also established a group of management agencies. Our nation has paid serious attention to natural disasters that endanger people's lives and carried out major efforts to prevent and control natural disasters that endanger the people's lives and safety, and these have fully shown the superiority of the socialist system.

Now the problem is that environmental pollution and destruction caused by man have become outstanding. Premier Zhou emphasized again and again in the past that prevention of pollution and protection of the environment are major tasks that affect our offspring and later generations. But because our understanding was deficient, they did not receive the proper attention. Money was spent on environmental control projects, but the economic results were not ideal. Viewing the whole situation, environmental pollution and destruction of the ecology were not controlled but continued to develop. Scientists have analyzed this trend and believe this is a potential threat and we should be highly alert. We must strengthen environmental protection work during this good opportunity of readjustment. We must place environmental protection work in an important position like solving natural disasters.

First, the urgent task of environmental departments is to strictly monitor the execution of environmental protection laws and to establish a system of environmental legislation, such as laws protecting the atmosphere, controlling noise, protecting water quality, the oceans and natural resources, environmental management regulations in capital construction, and regulations for environmental monitoring work. This legislation must be drawn up and promulgated as quickly as possible. Each region must start out from the actual situation and draw up regional standards and rules; each region should implement the reporting system for evaluation of environmental effects and environmental quality, establish planning for the environment, and fully develop the monitoring and managing functions of environmental protection departments. When drawing up national economic plans and social development plans, environmental protection must be an important aspect of the comprehensive balance, and planning management must be strengthened.

Second, new polluting sources must be strictly controlled. Through the readjustment of capital construction, we must consciously and firmly terminate all construction projects that are irrationally planned, that waste a lot of energy sources, resources, materials, that pollute the environment and that do not have control measures.

Third, the capital and some famous tourist cities must take the lead, concentrate forces to do the work of environmental protection well, carry out beautification and improve the environment so that they can serve as the model for the entire nation.

Fourth. problems that threaten the people's lives, problems of seriously polluted water sources and the atmosphere and the problem of noise must be tightly grasped and solved. At present, control of pollution created by commune and brigade enterprises and pollution by farm chemicals and foodstuff must also be strengthened to prevent them from harming people, and in particular, destruction of the natural environment must be stopped.

To solve these problems, we must first strengthen environmental monitoring and scientific research, develop investigative research in a big way, understand clearly the quality of the environment, realize what should be done to provide scientific foundations for environmental control, environmental policies, measures of prevention and control and technology, and to study our nation's technological and economic policies to accumulate data, samples and information for thoroughly solving our nation's environmental problems.

Strengthening the study of environmental sciences, doing a good job of scientific preparation, and preparing well for solving the environmental problems needed in the construction of the four modernizations are very important tasks in environmental protection work during the period of readjustment.

III. The Tasks of Environmental Scientific Research During the Period of Readjustment

The state has already determined that during the period of readjustment, science and technology must continue to develop, and has proposed that science and technology and the economy and society should develop in coordination. This is because science and technology have penetrated deeper and deeper into every aspect of the economy and social life, becoming important factors indispensable to economic and social development. On the other hand, the selection of key scientific and technological projects, the proportion of the various types of research work, the scale and speed of development of business, the manpower, materials and finances used must all take the present economic and social situation into consideration.

The position of environmental protection has become more and more important as the economy and society develop. Environmental protection work must pay a lot of attention to scientific and technological factors. Several years ago, the state invested capital in the control of environmental pollution, and some efforts produced poor economic results because of a lack of scientific and technical guidance and created waste. Scientific environmental evaluation was not carried out beforehand for some engineering construction projects, and the result was irrational planning and the environment was destroyed. There are many reasons that have created the situation today of having to spend money to control the environment on the one hand while the quality of the environment continues to drop on the other hand. But not paying attention to scientific and technological research is an important reason. We should take this as a lesson, take the good opportunity of readjustment to greatly strengthen environmental scientific research work.

1. First we must strengthen scientific research in environmental management, develop the study of the sciences of environmental management, environmental economics and environmental law, and systematically study our nation's environmental problems theoretically to provide a scientific basis for environmental laws, regulations and economic and technological policies that are suited to our nation's economic and social levels. We must also provide suitable methods and means of monitoring environmental quality, study the ability of natural purification and the capabilities of the environment in order to provide a foundation for drawing up environmental standards and plans which can be put into practice. We must strengthen the scientific research in environmental management. This will serve importantly in the overall control of environmental pollution and stimulate control.

2. We must emphasize the scientific study of the comprehensive prevention of pollution of key regions, cities and water supply systems--for example, the environmental quality study of the Beijing-Tianjin-Bohai region that is closely related to the protection, improvement and construction of the environment of the capital; the study of the Songhuajiang water system that has a serious effect upon imporvement of the environment of the northeastern region; the study of comprehensive prevention and planning of pollution in the Shenyang city area; and the comprehensive study of the environmental quality of the Xiangjiang water system which is a tributary of the Changjiang. These must all concentrate forces and cooperate in a big way to realize scientific research results and provide plans for preventive and controlling measures for the future. They will also provide methods and experience in the control of pollution for each profession.

3. We must develop the basic studies and the study of new technology in environmental science.

Solving environmental problems first requires the development of environmental science and emphasis on basic research. This is a prerequisite for drawing up practical environmental and economic policies, technical policies, preventive and control measures, environmental planning, environmental management and environmental standards. Developing research in these aspects is an urgent task in view of the need to solve environmental problems. Viewed from the angle of the development of natural sciences, it also has long-range strategic significance. The development of modern science and technology frequently makes breakthroughs on the scientific frontiers; environmental science is a new comprehensive science, it is nurtured by every branch of science and it provides new points of growth for the development of other sciences. It can push forward the development of earth science, biology, chemistry, physics and mathematics and new technological sciences. The present emphasis is on the study of the patterns of motion of pollutants in the environment and their effects upon ecology and upon the human body; the study of how to manage, protect and build the environment according to ecological patterns and economic patterns; the study of new technology to monitor and control pollution, to utilize field surveys, simulation experiments and mathematical models, systems analysis and such research methods to gradually perfect the methodology and basic theory of environmental science, develop each branch science, develop surveys of polluting sources and ecology, and establish an inventory of samples and data banks. We must accumulate basic information for scientific preparation to establish our nation's medium- and long-range environmental plans and plans for environmental science and technology.

4. We must improve the organization and management of the science and technology of environmental progection. The environment is a spatial structure of many layers, many units, many media, and many elements. Human activity which irrationally feeds materials, energy and information to the environment will affect ecological systems and affect man's health through physical, chemical and biological functions. Facing such a huge and complex environmental system, there must be macrocosmic and microscopic studies; there must be broad surveys and there must be pinpoint observations; there must be precise microscopic analysis and there must also be comprehensive studies. This requires organizing multidisciplinary research and developing multiple channel research. The state's leading scientific organizations need to strengthen the work of organizing and managing scientific research, mobilize the scientific and technical research units, fully mobilize the enthusiasm of all sectors, develop unified plans, cooperate together and rationally distribute the work. Doing everything alone will not work; everyone has to work to establish the foundation well to lessen roundabout ways and to utilize the limited capital precisely. Less money should be spent to do more work and redundant construction should be avoided. We must select the best to support the scientific research institutes that have a good foundation so as to gradually help them to become centers. In addition, we must arrange forces according to plan and with proper organization to study the introduction of technology, to digest and improve it. We must conscientiously do a good job of managing the results and of popularizing and applying them.

5. We must train talent and improve the level of the environmental science and technology teams. Our nation's environmental science and technology started late; at present, the number and the quality of the environmental science and technology teams, generally speaking, cannot meet the needs of the task of scientific research. Some environmental research institutes do not have academic leaders and lack a scientific research backbone force, the strength is weak, the direction is not clear, and they should be reorganized and readjusted. We must concentrate forces to establish well the provincial level research institutes that have better conditions and pay attention to strengthening academic leadership. We must actively develop academic exchange, organize scientific and technical personnel to visit and inspect the field, be receptive to new ideas, and improve the level of research work. The environmental society must sponsor many academic activities, popularize the knowledge of environmental science, and do a good job of publishing journals to satisfy the learning needs of scientific and technical personnel. At the same time, we must organize and develop international academic exchange and continue to improve the academic level and the working ability of the scientific research personnel. Research agencies and universities should admit more research students in environmental science or hold continuing education classes, lecture classes, and discussion meetings to train midlevel and high-level talent. During the period of readjustment, actively training talent is also an important task in carrying out scientific preparation.

Our nation's environmental protection science and technology have developed through the efforts of the past several years from the study of ordinary techniques of control to the study of regional comprehensive control and prevention; from the study of prevention and control of pollution by the "three wastes" to the study of human ecological systems; from surveys of pollution of the environment to the study of the migratory and conversion patterns of pollutants, their simulation, models and systems analysis; from manual sampling, analysis and monitoring to biological monitoring, developing automatic monitoring instruments, utilizing remote-sensing techniques, building monitoring vehicles, monitoring vessels by ourselves, we built Asia's tallest 325-meter pollution observation tower; from the macrocosmic surveys of infectious diseases to microscopic study of environmental toxicology; from the study of natural sciences to the interdisciplinary study with social sciences. We have already opened up environmental engineering, environmental chemistry, environmental physics, environmental biology, environmental earth sciences, environmental medicine, environmental economics, and environmental law and management. They have established a preliminary foundation for the development of our nation's environmental science and technology. In the future, as long as we conscientiously implement the policy of readjustment of the Central Committee, actively strengthen the scientific and technical work in environmental protection, conscientiously organize and implement the various scientific research tasks, we will surely be able to solve our nation's problems in environmental protection, and contribute what we should to create a beautiful environment for building our nation's socialist material and spiritual civilization.

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ENVIRONMENTAL WATER CONSERVANCY PROBLEMS DISCUSSED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 13-15

[Article by Shen Ganqin [3088 0984 0615]: "Brief Discussion of the Environmental Water Conservancy Problem"]

[Text] At present, our nation's water resources are deficient and the water is polluted. These problems have attracted more and more attention and concern. According to statistics, our nation has an average annual rainfall of 630 millimeters; the total amount of rainfall is about 6 trillion cubic meters; except for evaporation and leakage, the flow in rivers and over land surfaces totals an annual average of over 2.6 trillion cubic meters--less than Brazil, the Soviet Union and Canada, and slightly less than the United States, ranking fifth in the world. The national average depth of water flow is 274 millimeters, slightly higher than the world's average, but lower than the average in Asia, Europe and Latin America. By population average, the per capita average water flow in the world is 10,000 cubic meters, the highest is in Latin America at about 50,000 cubic meters, in the Soviet Union and the United States the average surpasses 10,000 cubic meters, that in Britain, France, Germany, Italy and Japan is between 3,000 and 5,000 cubic meters, while in our nation it is only 2,700 cubic meters, about the same as the per capita average (2,528 cubic meters) of water actually used in the United States in 1975. In general, in the total amount of ground surface water, our nation is relatively rich; in the unit area production of water, our nation is average; but in per capita average flow, our nation's water resources cannot be said to be rich. Also, the distribution of water resources in time and space is very uneven.

We build dams and reservoirs, carry out water conservancy projects; technically, these are efforts to regulate the uneven temporal distribution of flow. Transferring water across river valleys is an effort to regulate the uneven spatial distribution of flow. After liberation, our nation carried out large-scale water conservancy construction; the large Yellow River, Huai River, Hai River, the Changjiang, Liao River, Pear River and many medium and small rivers were controlled to varying degrees. In reservoirs alone, over 86,000 were built; the achievements have been recognized by the world; the total reservoir capacity reaches 400 billion cubic meters, but this constitutes only one-sixth of the total annual flow. The utilization of hydro energy constitutes only 4 percent of the resources. In addition, our nation's large rivers and even some medium and small rivers still have not been completely controlled, and floods, waterlogging, drought, and alkaline disasters can happen any time; the flooding areas of large rivers are also regions with a concentration of population and are economically more developed. Therefore, from the standpoint of developing and utilizing water resources, the water conservancy projects are not too many, but not enough. Therefore, emphasis must be placed on the survey, evaluation, rational utilization and balance of the supply and need for water resources. Pollution of water sources affects the livelihood of the whole nation and the people, and it should be emphasized more.

According to comparable data of 14 provinces and cities, in 1979 the entire nation released a daily amoung of 77.8 million tons of polluted water from industry and from living. Of the 78 rivers being monitored, 54 were polluted, and 14 were seriously polluted, including some important rivers which were all seriously polluted.

Take the Huangpujiang in Shanghai as an example: the Huangpujiang originates in Dianshanhu and Taihu, the specific drop of the riverbed is small, the annual average flow is about 300 cubic meters per second. Because of the development of production and the increase in population, the release of pollutants has increased. Beginning in 1963, the river section in the Shanghai city area has a black and smelly period each year. In 1978 it lasted 106 days, and in 1979 it lasted 99 days. From May to September during the period of massive use of water of Huangpujiang for farming, the average ratio of clean water to dirty water over many years was 6:1 to 4:1; in 1978 and 1979 it was less than 2:1; if the situation is not grasped tightly and controlled, the ratio of clean water to dirty water will be reduced further, and by that time it will be impossible to use the water of the Huangpujiang as drinking water any more.

The water quality of the Bangbu section of the Huai River is also poor! Since 1975, during the period when the floodgate of the Bangbu is closed each winter and spring, the river water is brownish black and stinks, the dissolved oxygen drops to below 1 milligram per liter, large numbers of fish and shrimp die. The situation gets worse year after year. In 1979, the worsening of the spring water quality became more noticeable: 400,000 people of the entire city did not have any drinking water; many people had to rely on the small amounts of water sources in air raid shelters and the few water wells. The floodgate was closed on 1 November 1979, and 9 days later the dissolved oxygen in the river water dropped from 7 milligrams per liter to nearly zero, the rate of worsening of the water quality was faster than usual by onefold.

Second there is the pollution of the Songhuajiang, which everyone knows about. The accumulation of mercury in the bottom mud of the river is about 250 tons; the content of mercury in the river water is several times that in Minamata Bay in Japan, which shocked the world.

These changes have given our water conservancy workers a new recognition in concept: in the past when we talked about damage by water we referred to flooding, waterlogging, drought and alkalization, now it seems we must add "pollution."

How to solve "pollution" should be an important part of the long-range plan of our nation's environmental protection sceince and technology and it must be emphasized. This is because once a water network is polluted, it is difficult to solve the problem. For example, the cleaning of the Thames in Britain took over 100 years and several hundred million pounds of investment, not including the organization and legal measures by the British Government.

To better solve the problems of pollution by the three wastes, besides controlling the polluting source that causes large amounts of pollution, that pollutes a large area, that causes serious damage which in turn causes serious pollution, management should also be strengthened, the technology should be reformed, and comprehensive utilization must be implemented. We should start out by cutting down wastefulness, correctly handle the relationships in nature, the polluter and the environmental protection department, and rationally distribute the amount of pollution each should be responsible for. To us, the environmental protection workers, this means controlling water quality management and planning well. Through the cooperation of each sector, we must reduce the three wastes in the production process to the most rational degree. In the question of environmental protection, we must redirect our struggle against the results of environmental pollution to a struggle against the cause that produces environmental pollution. We must change from being passive to taking the initiative. It can be said that during the period of readjustment, whether we can or cannot do the work of environmental protection will affect the smooth progress of the building of socialist modernization in the future.

We have repeatedly emphasized in the past that environmental workers of the water conservancy departments should not be responsible only for the protection of water sources, but they should also pay attention to environmental water conservancy work, and a very important aspect is evaluation of the environmental effects of water conservancy engineering projects.

In foreign articles of recent years, a large number of reports and views have been published regarding the environmental effects of water conservancy engineering projects. Most of the views affirm the necessity of evaluating the environmental effects of water conservancy engineering projects, but there are also two extremes. One believes that building water conservancy engineering projects destroys the ecological environment and it cannot coexist with environmental protection; this view complains that there are already too many water conservancy projects and asks that water conservancy engineering projects not be built any more. The other view believes that water conservancy construction coincides with reforming nature and benefits human needs and it also coincides with the wish to protect nature; therefore it asks for a reinstatement of the good reputation of water conservancy engineering projects! Actually, building water conservancy engineering projects eliminates flood disasters, builds up water conservancy, reforms nature and benefits mankind; its function and significance are known by everyone. But when developing visible gain, sometimes because of insufficient understanding or mishandling, unfavorable effects upon the ecological environment are also produced; this also objectively exists. The task of our water conservancy workers is to fully develop the gain of water conservancy engineering projects and to avoid any unfavorable effects upon the ecological environment as much as possible so that each water conservancy engineering project will not only produce better technological and economic results but also good environmental quality results. This is also the responsible attitude our water conservancy workers should have toward the people and offspring and later generations. For this, we must exert great efforts to do a good job of evaluating the environmental effects of water conservancy projects.

For over 10 years, evaluation of environmental effects has already rapidly developed into a science. This fact shows that the people have a relatively uniform understanding of the necessity of evaluating the environmental effects of engineering projects. Of course, there are different opinions, including the fact that there still is no scientific standard for the evaluation of environmental effects at present, there is no quantitative measurement; such evaluation cannot be forcefully implemented to avoid delaying the progress of construction projects and the development of resources. But it should be pointed out that in the entire course of the development of evaluation of environmental effects, scientific research work has always been placed at the forefront. Recognition of thispoint is fairly uniform and there are no exceptions in other nations. In this scientific research work, I want to emphasize three points: 1) formation of system; 2) coordination of multiple disciplines; and 3) emphasis on ecology.

Generally speaking, developing production and protecting the environment are both aimed at benefitting mankind. The goal is the same. But in the actual problems they frequently conflict. We must insist on solving the environmental problems while developing production, and at the same time, we must emphasize the development of production within the allowable range of the ecological system, we must include environmental problems in the overall national economic plan.

In the theory of environmental science, compared to foreign nations, we did not start out too late, the topics and problems for discussion are also not much different, but we have fallen back in the practice of environmental protection. The problem is that they began and took action and did what they said they should do, while we stopped at discussion and our practice was not enough. Practice reveals true knowledge. In the evaluation of environmental effects, besides theoretical research work, work in the following three aspects can be carried out in practice at present: undertaking preliminary evaluation, evaluation of the present situation, and retrospective evaluation. The importance of preliminary evaluation does not need any explanation. We must make decisions that are binding: large-scale engineering projects cannot be started without preliminary evaluation. Evaluation of the present situation refers to the evaluation to be made for current engineering projects that have not had a preliminary evaluation. Doing this is being responsible to the people. Of course, this does not mean retrospective evaluation is not important. Retrospective evaluation has an irreplaceable function in summarizing experience, developing science, improving the evaluation technique, and providing a scientific basis for making up the shortcomings of the engineering projects.

During the coming period, the emphasis of our nation's economic work is on undertaking readjustment. In the readjustment of the national economy, each department, each profession will undergo improvement or streamlining; environmental problems belong to the side of imbalance, and this should be improved. We must take this favorable opportunity to grasp tightly the development of the evaluation of environmental effects. We should also take action, do what we say, gain experience in practice, gradually improve and form a system.

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ECOLOGICAL BALANCE AFFECTED BY LOSS OF LAND

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 16-19

[Article by Qu Geping [2575 2706 1627]: "In Ecological Danger; Major International Environmental Problems III (continued); Punishment by Nature"]

[Text] Land constitutes only 29.2 percent of the earth's surface. The rest is water. But the majority of the higher forms of life on earth live on land; in particular, human beings all live on land. Therefore, land is a most important part of the cycle of live beings. Man relies upon the ecological systems on land to engage in agriculture, livestock production, forestry and many other kinds of economic activities to satisfy his need for food and other needs. In the land ecological systems, soil is the most fundamental and most important condition; it is the main factor that determines the structure and types of ecological systems. Soil suitable for plants to grow is formed by evolution and complex changes of thousands of tens of thousands of years of weathering and erosion of rocks and biological activity. Through the overexploitation and improper utilization by man, soil can degenerate or be destroyed within several dozen years or even several years. Once soil degenerates or is destroyed, generally it is very difficult to restore it to its original state. The destruction of soil is the greatest blow to agricultural production.

In order to increase the production of food grains, people have actively improved drainage and irrigation systems and used massive amounts of chemical fertilizers and farm chemicals, although these have all produced visible results; but the traditional closed cycle of the ecological system is thus broken, and the system loses its natural properties more and more, becoming unstable and weak. When man's need for food increases, and under the pressure of urgent expansion of cultivated land and livestock fields, forests are destroyed for reclamation, overproduction of livestock and intense and hasty planting activities destroy the ecology and create serious loss of water and soil. This phenomenon is spreading over large areas of the world. Northern Africa, which enjoyed the name of being the granary of the world during the Roman Empire, has now become a desert or a semidesert region; most of the food needs depend upon imports. In El Salvador 77 percent of the land, and in Madagascar 80 percent of the land, have been rapidly washed away. In the eastern mountain regions of Nepal, 38 percent of the land has been abandoned because the fertile surface layer has been washed away. Under ordinary conditions, each year, each hectare of land forms about 3.75 tons of surface soil. According to measurements by the United States, each year each hectare of land loses 30 tons of top soil; the loss is eight times faster than the formation. According to estimates, each year the world loses about 24 billion tons of soil because of washing away, several dozen million tons of fertilizers are lost, and to replenish this loss of soil requires several dozen billion U.S. dollars. The thin layer of soil wrapped around the earth's surface cannot bear such long periods of great loss. This is an important environmental question faced by world society. According to statistics of the U.S. Environmental Protection Agency, the rate of erosion of different types of soil each year is listed in the following table:

Table 1.

1）土　地　类　型	2）吨/平方公里	3）短吨/平方英里	4） 相对率(以森林为1）
5）森　林	8.5	24	1
6）草　地	85	240	10
7）废弃露天矿地	850	2,400	100
8）耕种土地	1,700	4,800	200
9）开发中的露天矿地	17,000	48,000	2,000
10）建筑工地	17,000	48,000	2,000

11)* 1短吨=0.907吨

Key:

1. Soil type
2. ton/square kilometer
3. short ton/square mile
4. Relative rate (taking forest as 1)
5. Forest
6. Meadow
7. Abandoned exposed mines
8. Cultivated land
9. Exposed mining fields being exploited
10. Construction site
11. * 1 short ton = 0.907 ton

Because of massive felling of forests, vegetation is destroyed, and this has worsened the damage by floods and silting of river channels. The destruction of the forests of the Himalaya Mountain Range has increased the frequency and the degree of damage by floods in India, Pakistan and Bangladesh. The Achicaya Dam in Colombia was put to use in 1955; because of sedimentation from silt, it lost one-fourth of its storage capacity within 22 months. In 10 years, silt and mud filled three-quarters of its reservoir capacity. The Tarbela Dam in Pakistan cost $1.2 billion; because of serious silting, it is estimated that it will have to be abandoned in less than 50 years.

Destruction of soil also produces adverse effects upon the weather. Soil bacteria serve importantly to regulate the atmospheric content. They serve a key function in most biological and geochemical cycles, such as regulating nitrogen, carbon and phosphorus. Minerals and plant dust from the soil are the conditions for forming clouds and rain; they are also the main factors that reflect solar radiation and reduce the intensity of solar radiation reaching earth.

The loss of land is large. According to estimates by the Environmental Agency, the world loses 5-7 million hectares of land each year. Since the beginning of history, about 2 billion hectares of land have been lost, more than the present area of cultivated land of the entire globe. There are many reasons that cause the loss of land, such as improper utilization which promotes the soil becoming infertile until it cannot be planted any more; for example, in the United Kingdom of Great Britain and Northern Ireland, some of the soil has an overly low content of organic substances and cannot be planted by ordinary methods. Erosion by water and wind: according to statistics of the Food and Agriculture Organization, the loss of land due to erosion by water and floods and waterlogging damage constitutes 30 percent of the various types of loss of land. Salinization and alkalization of soil: according to statistics, 30 to 80 percent of the world's irrigated land is more or less affected by salinization. Each year, 200,000 to 300,000 hectares of land is lost to salinization and flood water. Chemical pollution: because of the use of chemical fertilizers, chemical insecticides, chemical weeders, and the effects of the release of industrial waste, poisonous substances in the soil have increased drastically, destroying the structure and the fertility of the soil, and land has even had to be forcefully abandoned. Overproduction of livestock in grasslands: for example, in Kordofan Province in Sudan on the edge of the Sahara Desert, the number of domesticated livestock increased fourfold between 1957 and 1966. Since then, the number has continued to increase. The result of overproduction of livestock is a destruction of the dynamic balance between livestock and the natural grazing ground, causing grasslands to become deserts or semidesert areas. This overproduction of livestock exists in other areas of the world. Cities, construction, transportation, mining--all cause a loss of large amounts of land. The United States loses 1 million hectares of land each year to urbanization and transportation construction. Japan lost 7.3 percent of the cultivated land from 1960 to 1970 due to urbanization. In developed nations, at least 3,000 square kilometers of cultivated land are lost to urban construction each year. This phenomenon also occurs in developing nations. For example, in Egypt, where cultivated land is scarce, because of urbanization, each year 60,000 acres are lost. According to statistics, the area of large cities is developing at a rate twice the rate of population increase. According to estimates, from 1975 to the year 2000, the area of newly added buildings will be two and a half times that of the original buildings. The development of cities in the future just for people to live in will cause a loss of 140,000 square kilometers of cultivated land, 60,000 square kilometers of grazing fields, and 180,000 square kilometers of forests each year throughout the world. If activities that destroy land are not effectively halted, according to estimates by concerned departments of the United Nations, by the end of this century the area of farmland per capita will be reduced on a large scale, and that will become a great threat to man's food subbly. (see Table 2)

With a drastic increase in population and a reduction in cultivated land, where will the food come from? This can only be solved by strengthening agricultural production; for example, by applying more chemical fertilizers, chemical insecticides, chemical weeders, expanding the area of irrigation, etc to increase the unit area yield. These methods have been proven to be effective. But they bring serious environmental problems. Between 1951 and 1966, the ratio of the increase in food grains and the increase in the use of chemical fertilizers and farm chemicals is 1:5:10. This means, for each increase of 100 in food grains, there is an increase of 500 in chemical fertilizers and an increase of 1,000 in farm chemicals. If this trend continues to develop, the harmful substances in the agricultural environment will greatly increase and will have serious results for the ecology.

Table 2.

1975年 1)	2) 人　　口	40亿 3)
1975—2000年 1)	6) 耕地面积	12.4亿公顷 4)
	7) 每人平均耕地面积	0.31公顷
	8) 因都市发展损失土地	3亿公顷
	9) 因土壤退化冲蚀损失土地	3亿公顷
	10) 新增可耕地	3亿公顷
	11) 净 损 失	3亿公顷
2000年 1)	2) 人　　口	62.53亿 3)
	6) 耕地面积	9.4亿公顷 4)
	7) 每人平均耕地面积	0.15公顷 5)

Key:

1. year
2. Population
3. x 100 million
4. x 100 million hectares
5. hectares
6. Area of cultivated land
7. Per capita average area of cultivated land
8. Loss of land due to urban development
9. Loss of land due to soil degeneration and washing
10. Newly added cultivatable land
11. New loss

Because of the destruction of vegetation, the loss of water and soil in our nation is also serious. The Yellow River takes away an average of 1.6 billion tons of mud and sand each year It is the river containing the highest amount of sand in the world. If the mud and sand were used to build a dike 1 meter high and 1 meter wide, it would circle the earth 23.5 times. Because of the sedimentation of mud and sand, the riverbed on the lower reaches rises about a dozen centimeters each year, reducing the amount of floodwater in the river channel, increasing danger, and the only way to solve the problem is by continually elevating the dikes. Now the normal water level of the Yellow River has already reached the same height as the tip of the iron tower in Kaifeng. Loss of water and soil has worsened the natural disasters of a broad region, especially drought, waterlogging, wind and sand in the loess plateau. Agricultural production has lessened, affecting the life of the masses. Loss of water and soil is also a national problem. Heilongjiang Province, situated in the northermost part of our nation, produces 4 billion jin of food grains less each year because of loss of water and soil. Guangdong Province, at the southern tip of our nation, has in recent years lost over 1,000 square kilometers to soil erosion, 793 rivers and creeks are seriously silted, and a large number of reservoirs have visibly less capacity. In the Changjiang River Valley in central China, the loss to soil erosion is over 20 percent each year and the amount of erosion of soil is about 2.4 billion tons, causing mud and sand silting in certain sections of the river. According to estimates by experts, each year, 5 billion tons of mud and sand are washed away throughout the nation, equivalent to stripping away 1 centimeter of fertile soil layer of cultivated land each year throughout the nation; the loss of nitrogenous, phosphorous and potassium fertilizers is over 40 million tons, equivalent to the grand total of chemical fertilizers produced by the nation in a year.

Where Is the Solution

Mankind is facing an ecological crisis; this is a disaster that has widespread effects and that can cause profound damage. Now, mankind faces two choices: one is to continue the present way of felling forests without control and destroying the ecology, resulting in a further worsening of the agricultural ecological system which has already been seriously devastated; the other is to protect the vegetation, maintain an ecological balance, and change the vicious cycle into a benign cycle, thus allowing a steady and prolonged development of agricultural production on a healthy foundation. The two ways lead to two futures, either of which can be decided by man himself. Mankind still has great authority. Now is the time to seriously and rationally exercise this authority and not abuse it.

Under the guidance of appropriate economic policies, protecting and improving the agricultural environment can be realized. In protecting forests, as long as felling is rational, as long as the forests are renewed in time, they will not be exhausted, and they can create a suitable environment for agricultural production and people's lives. It is believed internationally that a ralatively suitable ecological environment can be created if the forests cover over 30 percent of the land and if they are distributed evenly. This can visibly reduce the natural disasters of drought and waterlogging, promote the development of agriculture and livestock production. Western nations became aware of this relatively early, and have taken a series of protective measures so that forests cover an average of over 22 percent; this is higher in some countries, for example, 28 percent in West Germany, 32 percent in the United States, 35 percent in Canada, 55 percent in Sweden, 64 percent in Japan, and 74 percent in Finland. Japan and West Germany, to protect the nation's forests, are willing to import trees and will not fell their own. Many developing nations also recognize the bad result of destroying forests and have begun to take some protective measures; for example, the Philippines has limited the export of logs and has ordered all males over 10 years old to plant one tree each month for a period of 5 years.

Our nation has exerted many years of efforts in forestation and has realized great achievements. Since liberation, the cumulative area of forestation and preservation of forests is over 400 million mu; this has promoted the development of agricultural and livestock production and has provided large amounts of wood for national construction. In planting trees and forestation, each locality has had many good models. For example, Youyu County in Shanxi Province carried out greening projects for more than 20 years and has increased the area of forestation from the original 0.3 percent to 21.5 percent, visibly improving the ecological environment, promoting the development of agricultural and livestock production. The yield of food grains increased onefold, the number of livestock increased threefold. This shows that if the policy is right, protection is effective, planting trees and forestation will quickly produce results.

Appropriately solving the fuel problem of farmers is an important measure to protect forest wood. There are many methods of solving the problem of fuel, such as producing biological methane, establishing firewood forests, utilizing solar energy, building small hydroelectric power stations, supplying coal, etc. It is generally believed internationally that preducing biological methane and establishing firewood forests are simple and practical, they can maintain the ecological balance, and they should be actively popularized. The Food and Agriculture Organization, the Environmental Agency, the International Development Association, and such international organizations are helping some developing nations develop technology in this aspect.

Our nation has realized major achievements in the development of biological methane. Since 1975, our nation has already built 6,580,000 methane pits and the number of people using methane as fuel reaches over 30 million. The resources of biological methane are rich, the technology has been basically grasped; if economic and technological guidance and help are given, it can be popularized over large areas and the difficult situation of fuels can be turned around. According to calculations, if 300 million tons of plant stalks are taken each year and added to human and animal excretion, 100 billion cubic meters of methane gas can be produced, and this will be sufficient fuel for the farmers of the whole nation. Producing biological methane is a strategic measure to solve the energy supply in farm villages, protect the environment, and promote the development of agricultural and livestock production.

In addition, broad numbers of our nation's farm villages have also utilized water conservancy resources to build 90,000 small hydroelectric power stations which provide cheap electric power for agricultural production and living. But at present, only 5 percent of the exploitable resources have been utilized, so the potential is still great. In general, the energy resource conditions in our farm villages are good, a way has been found, and the future is bright.

9296
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DESTRUCTION, REBUILDING OF ECOLOGICAL BALANCE STUDIED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 20-21

[Article by Huang Yuyao [7806 3768 3852] and Xu Muqi [6079 2606 0796]: "Destruction and Rebuilding of Ecological Balance"]

[Text] Earth--the cradle of life, after 6 billion years of evolution, has formed today's world of living beings, the animals, plants, microorganisms and man. The genesis, development and evolution of all life are the results of the motion of materials in specific environments. Water, air, soil and sunlight on earth have created the fundamental environmental conditions for the existence of life. All kinds of living beings exist, propagate, die here and the cycle continues ceaselessly; they rely on each other for survival and mutually limit each other, reaching a kind of dynamic balance--this is what we ordinarily call ecological balance.

The natural ecological system has been formed over the course of development of history. The various factors of the life system and the environmental system in an ecological system are basically coordinated and stable. The delicate balance of the ecological system can be destroyed when a certain important factor is added or taken away externally, causing the output and input of energy and materials to undergo change or when such change surpasses that which the system is capable of regulating by itself. In productive activities, because man lacks a correct understanding of such a very complex problem of ecological balance, neglects the study of ecological systems, lacks sufficient understanding of the reactions of nature, therefore when developing and utilizing natural resources, he starts out from the benefits he sees before him, develops irrationally, and causes ecological imbalance, destroys ecological balance, and he is punished by nature. For example, the United States and the Soviet Union have blindly reclaimed forests and grasslands on a large scale, causing "black windstorms" and serious loss of water and soil; not only did they not realize the predicted results, but on the contrary, they turned the 100 million and 10,000 mu of good fields into deserts and sand dunes. The Volga River water conservancy and hydroelectric power project, which the Soviet Union regards as one of the greatest technological achievements, has brought about devastating effects upon the environment of that country itself and neighboring nations, resulting in the salinization and alkalization of large expanses of land and turning land into marshland; the loss was great. For the past 30 years since the founding of the nation, our nation's productive construction has realized great achievements, but because we did not act according to natural patterns in certain places, because we did not act according to the principles of ecological balance, such as overfelling of forests, overreclamation of mountain land, overproduction in meadows, overfishing in water regions, and especially serious was the large-scale destruction of forests and reclamation of wasteland, we destroyed the moisture nurtured by forests and the ability of forests to regulate the climate, causing an imbalance in climate in many localities, the loss of water and soil intensified, the areas becoming sandy continually expanded, and thus in some places drought occurred when there was no rain, flooding occurred whenever it rained, and natural disasters occurred frequently. This situation has become a vicious cycle, and the situation has become worse and worse, seriously endangering agricultural and livestock production. These are all the bad results from the destruction of the ecological balance.

The core of the ecological system is the colony of living beings. Ecological balance is maintained by the automatic regulation and self-repairing abilities of the various colonies of living beings. Therefore, as long as man fully recognizes and grasps the mechanism of biological regulation and actively creates suitable conditions for the colonies of living beings to carry on self-repair, then in most situations, the original ecological balance which has become unbalanced or destroyed can still be revived. For example, Australia introduced large numbers of cows and sheep to develop livestock production. Yet something that was not foreseen happened. Each day, the 45 million head of cattle deposited 450 million piles of large, damp cow dung in the grasslands, 50 large expanses of grass were covered completely by cow dung and the growth of grazing grass was suppressed. The cow dung weathered and became dry and hard and would not decompose for several years; it hindered grazing grass and plants "yellowed" and withered soon afterward. The green grasslands became areas of land without growth; each year, the area of grasslands destroyed by cow dung reached 360 million mu, seriously threatening the development of livestock production. The rapid increase in cow dung also provided the ecological conditions for the breeding of massive numbers of flies. The number of various types of flies reached the extent of covering the skies and the land. In 1960, some ecologists visited Australia and saw the traffic policemen in the capital, Canberra, waving their hands before their faces continuously, and reported satirically that the gesture was "Australia's salute"; actually, they were brushing away flies flying in front of their faces. Flies are carriers of infectious diseases and the intermediate hosts of parasites of domesticated animals. They are harmful to the health of man and animals. In this country, the ecological balance among grass-cows-flies-men was seriously unbalanced!

To solve this problem, the biologists decided from the ecological point of veiw to raise and release the dung beetle (commonly known as the dung beetle) to treat the cow dung and indirectly eliminate flies. For over 10 years, Australia introduced several species of dung beetles from our nation and other regions. Each year, 5 million dung beetles were released at 300 localities, and within 3 years the results were outstanding. The dung beetles rolled the recent cow dung into balls and then used their own skillful method to quickly transport the dung underground for storage. Thus, the soil structure was loosened, the nutrition in the soil was increased, and this promoted the growth of green plants and controlled the propagation of flies, stopped the spread of parasites and germs, the grazing fields that had almost collapsed were quickly revived and are now full of life, and the yield of grazing grass has doubled. The small dung beetle can serve such a great function in the regulation of ecological balance!

Our nation's ecologists and environmental biologists have also realized very significant achievements in developing the ability of self-regulation and repair of the various colonies of living beings in the ecological environment and the scientific research in rebuilding ecological balance. Yaer Lake in Hubei Province is an example. Before 1961, the lake was full of aquatic grasses, fish and various kinds of aquatic life; it produced fish, shrimp, and lotus. The annual yield of fresh fish was over 300,000 jin; it was a famous place for fish and rice in Hubei Province. Later, a large chemical plant was newly built on the upper reaches, and the waste water containing organic and inorganic pollutants such as parathion, dimethoate, benzene hexachloride was directly drained into the lake without any pretreatment, causing serious pollution of the lake surface; the fish died, the water for irrigation and living along the banks of the lake was polluted, and frequently people and animals were poisoned. The beautiful Yaer Lake of the past became "a pool of dead water." Since 1972, the scientific and technical personnel of the Aquatic Life Institute of the Chinese Academy of Sciences delved deeply into research using an oxidation pond to treat waste water with the support and coordinated efforts of the local government and the people. The researchers utilized the four major elements of the basic structure of the aquatic ecology--the producer (algae, aquatic grass), the consumer (animals, including fish), the decomposers (bacteria) and the nonbiological elements (solar energy, water and its chemical components) and their cooperative elements to fully mobilize the self-purification ability of the body of water so that during the course of activity of the oxidation pond, bacteria oxidized the organic substances in the waste water, forming carbon dioxide, nitrogen and phosphorus. The algae utilized these inorganic components under sunshine to synthesize their own cytoplasmic material and release oxygen for the bacteria to oxidize organic substances. The energy fixed by the algae was transmitted by each nutritional level and finally it was manifested by the fish caught; thus industrial waste water was treated, useful resources were retrieved, and the results of comprehensive utilization and changing the harmful to the beneficial were obtained. Today, the structure of the colony of the aquatic ecological system in Yaer Lake has begun to revive, fishery utilization has been successful and the land facies environment has been controlled and improved.

9296
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COMMITTEE RECOMMENDS ZONING RESTRICTIONS ON LIVESTOCK

Port-of-Spain TRINIDAD GUARDIAN in English 11 Aug 81 p 3

[Text] Livestock rearing should be prohibited in certain areas in Trinidad and Tobago, and no new farms should be established within these areas.

Farmers already within these areas can continue to farm with the provision that they institute waste management systems.

These are the recommendations of the subcommittee comprising representatives of the Ministry of Agriculture, Lands and Food Production and Town and Country Planning, according to the periodical of the Agricultural Development Bank, "The Villager."

The committee, whose primary objective was to recommend areas where livestock rearing should be permitted on the basis of health, town and country planning regulations, water supply and other considerations, made several recommendations including that rearing should be prohibited in the following areas:

--existing urban areas, residential industrial and ancillary urban-activity areas.
--proposed urban areas.
--areas of intensive recreation and of high potential of recreational development.
--areas within the Northern Range, reafforestation project, forest reserves, wild life sanctuaries, and nature reserves except between the heights of Guanapo.
--The Dorington Gardens, Petit Valley and La Pastora ground water acquifers.

According to the "Villager": "It was also recommended that in light of advanced technological discoveries and practices with respect to livestock waste management and waste purification," no new farms are to be established but existing farmers can continue to farm.

Farmers continuing to work in these areas must institute waste management systems in areas of significant ground water resources and areas within the catchment of surface water systems which are significant for water production with the exception of Ortoire and South Oropouche drainage areas.

Recommendations also came from a number of bodies including the Ministry of Health and Environment, the Forestry Division, the Director of Civil Aviation and the Water and Sewerage Authority(WASA).

CSO: 5000/7583

INSECT USED TO PRESERVE GUASARE RIVER ECOSYSTEM

Caracas EL NACIONAL in Spanish 26 Jul 81 p C-3

[Article by Antonio Reyes: "They Will Use an Insect To Preserve the Ecosystem of the Guasare"]

[Text] Maracaibo, 25 Jul-Scientists from the University of the Zulia will carry out a program to preserve the ecological system of the Guasare River, utilizing experimentally an insect which lives in this same tributary in the Mara district.

The specific goal of this project is oriented towards preventing the coal mining being promoted by Corpozulia from destroying the flora and fauna of this river in particular and of its ecosystem in general.

This program, under the auspices of the Center for Coal and Iron Investigations of the Zulia and the Council for Scientific and Humanistic Development of the University of the Zulia, is relying on the scientific advice of Drs Adolf King from the Environmental Systems Research Institute, Franz Weibezahn of the University of Caracas, and Joseph Jay Ewald, director in charge of the biology department of the University of the Zulia.

The study takes in the physical, chemical and biological characterization of the Guasare. That is, the determination of the involvement of calcium, sulphate, salinity, temperature, sediment and other parameters in its ecosystem.

The first biological samples of these elements were obtained starting in December when the investigations were begun.

The Insect

The center of the investigation revolves around an insect named "Bentic invertebrate macre." According to the explanation given by biologist Carlos Luis Bello, member of the staff at the university of the Zulia and responsible for the program, these tiny acuatic creatures are the first indicators of chemical or biological pollution. For this reason its present structure is now being studied in order to appraise the changes that it will undergo when mining operations begin, as foreseen for 1985.

It is very difficult to precisely determine and quantify chemical pollution, because very often there is a specified chemical concentration in the river bed which disappears completely with the coming of a strong current (washout). Therefore, nothing is obtained if measurements are not taken at this time.

"That pollution is invisible. But the insects live it. They feel it. Their biochemical structure is changed by its action."

The studies that we are carrying out will permit us to establish control measures, among which there is one of biological character under the supervision of Prof Simon Rodriguez, also from the University of the Zulia.

Polluting Agents

According to Bello, one of the polluting factors in all coal mining is the presence of sulphate, a mineral that produces a high acidification.

Nevertheless, the scientists working on this project have hopes that this effect may be reduced. Studies performed here have revealed that the waters of the Guasare pass through lime formations in whose chemical composition there exists an element called PH "Buffer" (quantity of hydrogen in the water).

Also participating in the work mentioned are the assistant instructor, Adaulfo Jimenez and the graduates Jose Maria Prieto, Angeles Esteves, Orlando Ferrer and Sandra Maldonado.

"If I add a specific substance to that water," explains the scientist, "the PH 'buffer' does not alter its chemical characteristics. There is no change.

"A while ago I worked an entire day to establish how much the PH varied during that period. I determined that it changed 0.4

"That indicates that if it is subjected to a high chemical concentration it may go unchanged. It may not be affected.

"This is very important for our objective, for it may be that pollution can be avoided through natural processes."

Iron

Another polluting factor in the river waters is iron. Prof Olga Diaz developed a subproject to detect heavy metals, especially iron.

Coal, according to Bello, contains an element known as pyrite (Fe2 S) composed of iron and sulphate. Both minerals are serious pollutants.

"Every time that coal is moved to extract it, the water is exposed to pyrite. This contact causes pollution.

"It has been scientifically proved if coal can be extracted in the shortest possible time serious pollution can be avoided."

Sediment

The sediment which accompanies coal mining operations can affect the ecosystem, because it may be that it contains elements noxious to the flora and fauna in the river.

Experiments have been carried out to determine whether or not its composition is harmful to living things in the river, and also to determine how that will vary over time.

"We are also determining the dissolved organic matter in the river bed.

"It turns out that rivers depend on an external ecosystem, principally of plants. Fish eat the leaves and are in turn devoured by larger animals, and so on.

"Now then, if coal mining alters plant life, this will also change the composition of available organic matter."

"Are you taking measures to see that this will not happen?"

"We are working to find out which are the factors influencing pollution and to standardize these parameters. This is very important in the study that we are carrying out. What are we analyzing? Physical and chemical conditions, the substratum, nutrition, etc."

"What have you done to protect animal life?"

"Initially, study and understand it. Know how it is presently behaving and what its reaction will be when mining operations start, so that adequate scientific precautions can be taken beginning now to see that the process causes no harm."

The Sewers

In the final part of his explanation the scientist pointed out the problem seen in Venezuela with the studies performed in what is called the "sewers."

Bello set forth that the "sewers" are a truly drastic system for all animal life. That is, the organisms disappear completely with a rain or a strong current of water. "This problem facing us scientists when we go to study these currents is that we cannot determine the natural effect producted by them on living organisms."

9746
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WEST AFRICAN STATES COOPERATE TO COUNTER COASTAL POLLUTION

Abidjan FRATERNITE MATIN in French 24 Jul 81 p 3

[Article by Raphael N'Guessan]

[Text] The countries in the coastal region stretching from Mauritania to Namibia must now implement methods to confront the omnipresent phenomenon of marine pollution and the need to assure the protection and development of the marine environment and the coastal zones of this sub-region.

A program of priority activities which should enable these countries to combine their efforts and to take concrete actions, beginning now, to combat pollution and to safeguard the quality of the marine environment and the coastal zone has just been drawn up. This program of priority activities for the biennial period 1982-1983 was, of course, derived from the plan of action drafted and approved several months ago at Abidjan by the Plenipotentiary Council on Cooperation in the Protection and Development of the Marien Environment and the Coastal Zones of the western and central regions of Africa.

Thus, during the period involved (1982-1983), national or cooperative efforts and initiatives by the countries will primarily involve combatting coastal erosion, continued surveillance of pollutants in the ocean and in coastal zones, and establishment of national emergency intervention plans. And, as support measures the program recommends intensified efforts in training and in reinforcing legislation affecting the fight against pollution and the protection of the sea and of coastal zones.

These are the basic results of the first meeting of the Steering Committee for the Marine Environment held in Abidjan which opened at the beginning of the week and ended on Wednesday.

Contrary to the information we first received, five countries (Ivory Coast, the Congo, Ghana, Nigeria, Senegal) out of the seven comprising the Steering Committee participated in the first meeting. Only Gabon and Angola were not represented.

At the end of the 3-day (20-22 July) meeting, the Committee formulated and adopted a 6-page report including the observations and recommendations arising from the discussion of the various questions on the agenda, which basically involved examination of the decisions made 4 months earlier by the Abidjan council; and the identification of priority areas in which projects should be established for the next 2 years under the program plan.

Upon examining this final document it appears that at present only 12 out of the 20 or so coastal or island countries in the region involved have signed the agreement and the treaty committing them to combine their efforts to combat pollution and to assure the protection and development of marine and coastal environments. The representatives to the Committee agreed to disregard the deadlines initially established for the signing of these documents and to further recommend dispatching a "high level mission" to certain countries to discuss with them the possibility and the opportunity of "adhering to the agreement and ratifying it without delay." It must be noted that on this point the committee members demonstrated their flexibility by excluding from their report any restrictive measure which might block participation in the agreement and the treaty by any country in the region. It was, moreover, this concern which supported Angola's continued participation on the Steering Committee. According to the by-laws of the Abidjan Council, Angola, since it has not yet signed the agreements, should be excluded from the Steering Committee, while remaining free, however, to join the group of countries who have signed according to its needs or interests.

It seems, according to the UNEP secretariat, that the delays and the hesitation on the part of the countries in coming to a decision are due more to the economic situation.

It is therefore highly significant that the members of the Steering Committee have not found it necessary to linger over questions of principle. Also, they have demonstrated that they are more concerned with the particularly important issue of the request for their participation in proposing to the countries some priority actions which could be undertaken in 1982-1983 under the program plan.

Basically, the projects selected originate from one of the four major orientations of the aforementioned plan: environmental management. The Steering Committee's choice for the inauguration of the plan is particularly judicious as it is now essential to consider the environment in order to "achieve a continued, efficient and balanced socioeconomic development for the well-being of man." With this in mind, it is a matter of "integrating all the components of the environment and all suitable methods in order to approach zero-level pollution and to promote the development of the biological resources of the marine environment and the adjacent coastal zones."

In identifying the Plan's priorities, the delegates have not lost sight of the fact that rational management of the environment is achieved through "continuous surveillance of the environment and protection of the eco-systems," all of this assuming the existence of organizations for training, coordination and for intervention in case of an emergency.

These are the major concerns which gave direction to the proposals brought forth at the first meeting of the Steering Committee for the Marine Environment. As our minister of the environment, Mr Antoine Brou Tanoh, stressed on Wednesday in closing the work sessions, these project proposals will finally enable initiation of "the first concrete actions" of the plan.

There is not a shadow of a doubt, as the Minister indicated, that the efforts deployed to reach the current stage "will be appreciated at their true value by our respective governments" and supported by them in the field.

9693
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ANGOLA

GRADUAL DISAPPEARANCE OF LUANDA BAY CREATES HEALTH DANGERS

Luanda JORNAL DE ANGOLA in Portuguese 23 Jul 81 p 4

[Article by Pedro de Almeida]

[Excerpts] Residents of Luanda or anyone visiting this lovely Angolan city can, with little effort, observe a phenomenon that, occurring before their very eyes, makes them ask themselves why such a situation exists. What situation? The Bay of Luanda is emptying. It is losing water. It must be saved. It is necessary to halt its deterioration.

The logic is sound. The bay is in danger. Every citizen can see it with his own eyes, there on the seaside; it is an obvious reality, to which the sight itself is indisputable testimony. The Bay of Luanda is disappearing. Little by little, it is losing its liveliness. Its tame waters reflect its fading hydraulic force; its power is gradually waning, under the fearful and concerned eyes of the residents of Luanda.

The problem of the bay is increasing and, hence, community concern about it. Thus, "Luanda Bay, how it was born and grew, how it became sick and how it may die," was the central topic of a seminar held last weekend in the capital. The seminar, which took place in the Center for Oncological Research and Treatment, was attended by Minister of Health Mendes de Carvalho and other individuals concerned with environmental issues.

The issue at hand was explained by a group of specialists in various sectors, including geologists, biologists, civil and chemical engineers, physicians and architects, who enriched the discussion, bringing up key points of the issue as it pertained to their field of expertise.

The various speeches focused on the dangers presented by the situation which the Bay of Luanda is now experiencing, owing to such causes as silting (accumulation of debris), diminished velocity and volume of sea water, and land fill (to support the bridge which links the island to the city) and the deposits of fecal matter from the sewer system, all of which contribute greatly to environmental pollution, turning that area of our capital, which should be an attractive feature, into something repulsive.

Corimba Point is the name given the bar between the Ilha de Luanda and the sand beach known as the Peninsula das Palmeirinhas. It was by way of Corimba that ships from the south entered the Port of Luanda, particularly ships from Brazil which called at the port.

With time, the bar silted up, preventing passage of deep-draft ships. In modern times, with construction of the bridge which linked the mainland to the island and closed the Port of Luanda to entry from the south, the Corimba bar has lost the importance it once had.

The Bay's Sickness and How It Could Die

As can be deduced, the silting of the Corimba bar and construction of the island bridge have worked together to change the morphology of the Bay of Luanda. Construction of the earthworks (island bridge) was pursuant to a municipal resolution (Luanda Municipal Chamber) in the early 1960's to facilitate the flow of city residents and visitors to the island. As can be seen, in 1963-64, an immediate problem was resolved with longer range negative consequences.

When the bridge was built, the bay received less water; its volume was diminished. As time passed, the bay became increasingly calm and the water level dropped considerably. The land fill prevented the water from circulating freely, not only driving away marine life (fish and shellfish) but further the heavy silting of the bay in recent years. It is noted that most of the mains of the city's sewer system empty into the bay.

The sanitation system consists of a single sewer network, which collects residential and industrial waste water as well as rain water. The city's sewers are old; they were probably built 40 years ago. Because of their age, the mains have often clogged, obstructing the passage of waste water, causing cave-ins in several city streets under which the sewers were laid.

In addition to being old, the sewers have suffered abuse in recent years, receiving material which does not circulate easily and is hard to purify, such as solid waste formed by broken dishes, tableware, cans, animal remains, food waste, etc., which moves toward the open waters of our bay without first passing through decantation or sedimentation basins. (There are none.)

The open sea is capable of purifying polluted water containing biodegradable organic matter from the sewers. In the purification process, the above-mentioned materials become an nondegradable product that is deposited on the seabed. Meanwhile, as the Luanda sewers are overloaded, carrying massive amounts of matter, it is becoming extremely difficult for the still waters of our bay to carry out the natural purification process, resulting in the defilement of the mainland and island coasts, with bacterial pollution and contamination of fish and shellfish by pathogenic microorganisms.

Preliminary studies based on bacteriological analysis of the bay waters have revealed an abundance of pathogenic bacteria, such as Escherichia Coli, Clostridium, Trichomonas, Proteus, Salmonella and coagulase-positive Staphylococcus. The abundance of these microorganisms constitutes a latent health problem for the population of Luanda.

Because the environment is favorable, the Bay of Luanda is very rich in mollusks, particularly the "mabanga." This marine specie lives buried in the mud and obtains its food by filtering the water. Both the organism and the shell protecting it are capable of retaining a whole range of microorganisms that are pathogenic to humans.

In recent bacteriological examinations, mabangas taken from the bay were found to have the bacteria Proteus (which causes diarrhea and urinary infections), Escherichia Coli (which causes infections in the digestive and urinary tracts), and pathogenic coagulas-positive Staphylococcus (responsible for a wide variety of acute infections, specifically skin infections).

The mabanga also exhibited a high concentration of Salmonella, the bacterium responsible for intestinal fevers, specifically typhoid fever, which has been reported frequently in the city of Luanda.

As can be seen, the Bay of Luanda must be saved. In its present condition it is a well of disease. It makes the residents of Luanda more vulnerable to illness. It is necessary to safeguard the integrity of the bay to prevent its deterioration, and must be done immediately.

To save the bay and to solve the glaring problems of public health and hygiene, "let us blow up the bridge and let the waters of our bay circulate freely," as an urban planner in our capital recently recommended.

We will take up this topic again.

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DAMAGE, DEATHS REPORTED IN NATURAL DISASTERS

Malumfashi Flood

Kaduna NEW NIGERIAN in English 5 Aug 81 p 15

[Article by Aliyu Modibbo]

[Text] THREE people have been confirmed killed and property worth millions of Naira destroyed in the recent flood disaster that swept away the 8 million Naira Malumfashi Dam in Kaduna State.

This was contained in the report of the special committee of the state House of Assembly submitted yesterday by the chairman of the committee, Alhaji Ilu Barde.

Alhaji Barde described the flood disaster as the first incident of such magnitude Malumfashi had ever experienced. He appealed to the state government to immediately send relief materials to the victims of the flood.

Alhaji Ilu Barde said his committee investigation revealed that the dam was badly constructed.

Alhaji Sani Malumfashi appealed to the state government to provide houses to the victims. He said the victims were now exposed in open air.

Alhaji Yasi Tela thanked the committee for its work and reminded the House of the same disaster at Soba. He said life had become unbearable to the victims of Soba flood and appealed to the state government to aid the victims of both Malumfashi and Soba disasters.

In his own contribution, Alhaji Ali Mai Changi drew the attention of state government on the importance of the water engineers. He said the government should send water engineers to survey the areas and make recommendations to the state government.

The House unanimously adopted the resolution calling on the state government to send relief materials immediately to the victims of the flood disaster.

Flood, Drought Relief

Kaduna NEW NIGERIAN in English 5 Aug 81 p 15

[Text] The Federal Government spent about 20 million Naira on relief materials for victims of various natural disasters which occurred in Nigeria within the past one year.

The Presidential Adviser on Parastatals, who is also in charge of the National Emergency Relief Agency (NERA), Dr. O. Olaifa, told this to the News Agency of Nigeria (NAN).

He said that the amount included 3 million Naira given to Oyo State following the Ogunpa flood disaster last year, and 2.7 million Naira given to Rivers State as a result of the oil blow-out, as well as 3 million Naira to the Bauchi State drought victims.

CSO: 5000/5053

BRIEFS

AFFORESTATION IN KADUNA--The Kaduna State Government is to spend one million Naira for an afforestation campaign this year, Governor Alhaji Abba Musa Rimi has announced. Speaking at the launching of this year's tree planting campaign in Daura, Alhaji Abba Rimi said that the amount was part of the 2.6 million Naira voted for forestry services in the state this year. [Text] [Kaduna NEW NIGERIAN in English 7 Aug 81 p 9]

CSO: 5000/5053

WARDEN WARNS OF DDT CONTAMINATION

Salisbury THE HERALD in English 25 Aug 81 p 9

[Text] Zimbabweans appear to have the highest average human levels of DDT in the world and the contamination of the environment could make as many as 20 bird species extinct in the next 15 years, Mr Ron Thomson, said last week.

Speaking to the Tsatsi Farmers' Association north of Concession on Friday he also warned of the danger to fish and one of their major sources of food, zooplankton. Mr Thomson is a provincial warden with National Parks and Wildlife.

The average levels of DDT and its derivatives in the fat of Zimbabweans and in mothers' milk was the highest recorded in the world with the exception, for milk, of a small community in Guatemala.

Higher levels had been recorded among people working with DDT in factories for many years but, among the general population, Zimbabwe appeared to be a worldbeater.

A 1979 report by the World Health Organisation revealed just four cases, throughout the world, of people with more than 20 mg per kg in their fat.

Figures

Mr Thomson said he had recently been told by the Government analyst that average levels in Zimbabwe ranged between 10 mg and 70 mg per kg with one or two figures over the 500 mg mark; but these, the analyst thought, might be the result of mistakes in the laboratory.

Doubt had also been expressed on the average figures, said Mr Thomson because the samples came from a mortuary where DDT was used to spray flies.

But, he added, absorption was minimal through the skin of a living person and would be even less in a corpse, he had been told by doctors. About 90 percent of all the DDT in a person's fat came through his food.

DDT was a very safe poison to handle. It could, and had been eaten by the teaspoonful, very little was absorbed through the skin and the particles were large enough to be filtered before reaching the lungs.

More than 90 percent of all the insecticide taken into the body was excreted.

Reserves

The problem came, he said, when fat reserves were used and DDT and its derivatives entered the bloodstream. Heavy loss of fat could take place when a person had a disease such as malaria or hepatitis.

"The WHO report did not consider this at all and I have written to them pointing it out. But, to be fair to them, the levels in the rest of the world are probably so low that they decided the problem wasn't important," he said.

Average levels of DDT contamination in mothers' milk, taken from hospital pools, were almost as high in Zimbabwe as the highest individual level recorded anywhere else in the world. The highest Zimbabwean figure was a world record.

Besides being a nerve poison when in the bloodstream, DDT could also cause hormonal problems. It was hormonal imbalance which caused birds of prey to lay thin-shelled eggs when heavily contaminated, said Mr Thomson.

Birds of prey, especially those which ate other birds or fish, were the most severely affected and would form the bulk of the 15 to 20 species which would become extinct within 15 years unless DDT levels in the environment dropped drastically.

DDT rapidly decomposed to DDE and DDD, he said. DDE had a half life, the time taken for half the mass to break down into harmless products, of about 25 years and DDD lasted much longer.

Zooplanktons, an essential carbon-fixing organism which fish relied on as a source of food, died when contaminated with very low levels of DDT. The insecticide was also more effective on fish than more common fish poisons.

Fish and birds could store many times the lethal dose in the fat reserves without any problem. But when fat was used, such as during months of poor food supply, the DDT became free and could kill.

Dying fish had been seen near Spurwing Island on Lake Kariba. "This might be a result of DDT," said Mr Thomson, "but there is no proof. We also know the tiger fish population of Lake Kariba is declining. We don't know why but DDT could be a factor."

Baby fish, just hatched, were at high risk. For the first few days of their lives they were sustained by a yolk sack which amounted to up to 50 percent of their birth mass and so could receive relatively high doses of DDT very quickly.

Services

Zimbabwe used about 1 000 tonnes of DDT a year, said Mr Thomson: 300 tonnes for agriculture, 300 for anti-malaria health services, and 400 tonnes in tsetse control.

Agricultural use could be eliminated and other uses curtailed, he suggested.

DDT was used to spray the inside walls of houses and huts to kill mosquitoes. Huts had to be sprayed just once every two years with DDT: the alternatives would mean spraying every six months.

"This would mean four times as many staff and vehicles and the rest of the infrastructure, quadrupling the cost of control. The actual cost of the insecticide isn't a major factor," said Mr Thomson.

"I don't want to be responsible for the death of anyone from malaria," he added, "but I hope that it will be possible to use alternative control methods.

"For its own reasons the Ministry of Health is thinking about spraying DDT and a substitute alternately because it doesn't want any build-up of DDT-resistant mosquitoes."

'Banning Will Hit Peasants'

The peasant sector might find the cost of alternatives to DDT too costly, the chairman of the Natural Resources Board, Mr Lance Smith, warned yesterday.

Mr Smith was commenting yesterday at the Salisbury Agricultural Show on a call by the Salisbury branch of the Commercial Framers' Union to ban DDT for agricultural use.

"I am glad to hear the commercial farmers are able to discontinue use but you must remember the communal sector as well and here we take advice from the responsible agency, Devag.

"These farmers operate on much smaller margins than their commercial counterparts and the matter has to be looked at very carefully.

"But, as I have said before, I hope we will be able to almost ban DDT within three or four years."

CSO: 5000/5054

BRIEFS

DDT BAN BACKED--The Salisbury branch of the Commercial Farmers' Union wants DDT immediately banned for all agricultural uses in Zimbabwe. Announcing this yesterday at a meeting of the Tsatsi Farmers' Association north of Concession, the association chairman, Mr David Neild, said: "We would like to see DDT banned with immediate effect. The general public seem to believe we want to keep DDT because it is cheap and effective, but we are only too keen to get rid of it." The resolution from the branch meeting will now go forward to a full meeting of the CFU executive. Two months ago the Tsatsi Farmers' Association put forward a resolution, said Mr Neild, asking for the resignation of the chairman of the Natural Resources Board, Mr Lance Smith, because he was "supporting DDT". The association was told Mr Smith would like to put his case personally either at a meeting or to Mr Neild and some members of his executive committee. "We offered him today and also told him it was our intention to invite Mr Ron Thomson so we could hear both sides of the story. We were told he had a previous engagement," said Mr Neild. [Text] [Salisbury THE HERALD in English 22 Aug 81 p 1]

RURAL WATER--Bulawayo--Eighteen more village water supplies and one pipe scheme are to be established in Matabeleland, the Provincial Water Engineer, Mr J. B. Nurton said yesterday. He said five drilling teams were out in the province repairing boreholes. Four of the teams were in Matabeleland North, one each at Tjolotjo, Gwai, Nkosikazi and Nkai. The fifth was in the Beitbridge-Shashi area. Mr Nurton said he could not specify the number of boreholes that needed to be repaired in the province because some of them were repaired by district councils, and the ministry was only called in to undertake major repairs that the councils could not manage. [Text] [Salisbury THE HERALD in English 20 Aug 81 p 11]

CSO: 5000/5052

ECOLOGY PROBLEMS IN PAVLODAR-EKIBASTUZ TPK DEVELOPMENT REVIEWED

Alma Ata VESTNIK AKADEMII NAUK KAZAKHSKOY SSR in Russian No 6 Jun 81 pp 60-64

[Article by Ye. V. Gvozdev, academician of the KaSSR Academy of Sciences: "Environmental Protection Problems Because of Development of Ekibastuz Power Engineering Complex*"]

[Text] Modern scientific and technical progress, while guaranteeing the economic development of society, at the same time makes it more difficult to maintain nature in its natural wealth. We are witnessing how fast pollution is rising in the atmosphere and individual reservoirs, the soil cover is breaking down, the population of wild animals, birds, reptiles, fish and other animals is declining, the vegetation is becoming sparser, and the ecological systems and individual biocenoses are disrupted. Numbers are cited more often on the reduction in reserves of mineral raw materials which play the main role in further scientific and technical progress.

But it is also known that the existence of man, like of all animals inhabiting our planet , is guaranteed by definite conditions formed for millions of years which promote the normal course of physiological processes and constant interaction between man and animals and the environment. Therefore even slight deviations in the condition of natural conditions should be taken into consideration so that measures can be taken in time to restore the grossly disrupted natural systems and protect the environment.

Questions of environmental protection and efficient use of its resources are not raised more widely anywhere than in our country. They have been the focus of attention of the Soviet state since the first days of its existence. V. I. Lenin took all measures so that by placing natural resources at the service of the people, they would be used prudently, on a strict scientific base.

The new USSR Constitution has proclaimed that in the interests of the present and future generations, the USSR is taken measures for the protection and scientifically substantiated, efficient use of the earth, its resources, water resources, plant and animal world. Actions thought out in advance and thoroughly planned, especially under conditions of a socialist society, multiply the resources of the earth, normalize the environment, beautify and enrich the landscapes, and immortalize for the progeny all that is excellent and the riches of nature.

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*Abbreviated text of a report given on 25 November 1980 in Pavlodar at the republic scientific and practical conference "Problems of Forming the Pavlodar-Ekibastuz Territorial Production Complex."

The decisions of the 25th CPSU Congress defined as one of the tasks of the 10th Five-Year Plan a precise program of work for the further normalization of the environment, in particular, development and implementation of measures using the latest scientific and technical resources for the use of natural resources, monitoring the condition of the environment and the sources of its pollution, and reduction in the adverse effect of wastes on the environment. "We can use nature in different ways," stated L. I. Brezhnev from the tribune of the 25th CPSU Congress, "We can, and the history of mankind knows many examples of this, leave behind barren spaces hostile to man. But we can, and need, comrades, to improve nature, to help nature to reveal its vital forces more completely." We must start from here in solving problems associated with development of natural resources.

The creation of the largest fuel and energy complex based on the development of the Ekibastuz and Maykyubenskiy lignite fields is associated with the resolution of a number of complicated scientific and technical questions that refer to the examined problem. Stripping operations disrupt considerable areas occupied either by natural communities, or sown with agricultural crops: accumulations of unusable rock, dumps and waste piles are formed. It is the primary task of the production engineers to stipulate in advance in the drafts and plans the necessary recultivation of the dumps and disrupted land. It is the business of the scientists, the botanists and soil scientists, hydrogeologists, geologists and miners to formulate recommendations for the most applicable, efficient and inexpensive recultivation of the disrupted territories. A lot has already been done in this respect. The institutes of soil science and botanics of the KaSSR Academy of Sciences, for example, are working on the problem of using dumps for planting bushes and trees. Scientific research in this direction needs to be expanded even further so that the achievements of science are introduced more rapidly and efficiently into the practice of environmental protection in the areas of the greatest influence of anthropogenic factors on it. More decisive measures are also required from the production engineers. The already formulated recommendations must be employed more extensively and rapidly.

An important factor in the efficient use of open pit territories is also preliminary removal of the fertile soil layer with its subsequent use in the recultivation of these lands.

From the position of the protection and efficient use of natural reserves, it is important to take into consideration the comprehensive use of mineral-raw material resources of the Ekibastuz coal basin. Many scientific research and planning institutes are working on these questions. The developments which have already been made convincingly confirm the basic possibility of industrial processing of the rocks of the inner strip pit, enrichment tailings, and the ash from burning the Ekibastuz high-ash coals.

Studies of the NIITsement [State All-Union Scientific Research Institute of the Cement Industry], VNIISTROM [All-Union Scientific Research Institute of Building Materials and Structural Parts], GIPROTSEMENT [All-Union State Planning and Scientific Research Institute of the Cement Industry] and other institutions have proved the possibility of using the ash obtained from burning coals in the Ekibastuz GRES, as a mineral additive in cement production, and as a filler in making silica brick and light heat-resistant concrete. This ash, as shown by the studies of the Institute of Metallurgy and Enrichment of the KaSSR Academy of

Sciences, can be, and evidently, even needs to be used to produce alumina, and this means, also aluminum and certain rare metals, for example gallium and vanadium. The work of the Institute of Fuel Minerals of the Ural NIICHERMET [Scientific Research Institute of Ferrous Metallurgy] has established the possibility of producing from rock of inner strip pits a silicon-aluminum alloy which can be used as a deoxidizing agent in the production of steels.

Production tests at the Cherepovetsk metallurgical plant demonstrated that deoxidizing by silico-aluminum produces steels in accordance with the GOST requirements, and even has a number of advantages as compared to deoxidizing by aluminum and ferrosilicon.

The Institute of Metallurgy and Enrichment of the KaSSR Academy of Sciences has successfully done work to produce metal aluminum from the Ekibastuz coal ash.

Currently over 60 institutes and planning organizations are working on the problem of using the mineral part of Ekibastuz coals. A number of studies have covered the production of gallium, energy-accumulating substances, highly effective coagulants for production of construction ceramics, light heat-resistant concrete, ash gravel, porous fillers and other materials for construction purposes. Despite the considerable work on the complex use of the components of the Ekibastuz coal fields, this problem is the cause of serious concern since the plans provide for construction of enterprises to use only a slight part of the inner strip pit rock, ash and slags. At the same time, the calculations show that when the rated output is reached, 11.3 million tons of country rock will be removed each year, and during the combustion of coals at the planned Ekibastuz GRES, 30-35 million T of ash will be dumped. Therefore the output of the planned enterprises for processing the stripped rocks and ash must be designed for their complete use in the future, otherwise it will be difficult to solve the questions of environmental protection.

The Ekibastuz coal fields are being worked by open-pit method with a drastic change in the natural environment in the extraction regions where the open pits alone comprise an area of about 17,000 ha. The territories adjacent to the open pits will undoubtedly be polluted with dust and gases of the mining enteprises, and the hydrogeological regime and sanitary-hygienic conditions of the locality will be disrupted. It is the immediate task of the scientists to conduct definite studies, to foresee the negative consequences of these changes in nature, and to be able to prevent them.

Protection of the air basin from pollution, i.e., the atmospheric air, plays an important role. The greatest attention is currently focused on this question. It is enough to quote the recently adopted law on protection of the atmospheric air. For the first time, requirements are being stipulated for establishment of standards of maximum permissible emissions of pollutants into the atmosphere. This, of course, will increase the responsibility of the leaders of the enterprises for maintenance of air purity.

Because of the rapid development of Ekibastuz, the outputs of the existing TETs are rising intensively. However, by the conclusion of the oblast sanitary and epidemiological station (SES), the increase in TETs output is being done without the radical solution of the question of protecting the atmospheric air. The KaSSR

Ministry of Power and Electrification and the planning institute "VNIPIEnergoprom" have not paid attention to the requirement of the Pavlodar oblast SES regarding the need to reconstruct the existing low-efficiency ash-traps, electrical filter units, increasing the height of the smokestack corresponding to the calculations for scattering emissions, and other measures. This situation, of course, cannot help but cause concern for the future of the air basin in Ekibastuz.

Taking into consideration the switch to bulk recovery of the Ekibastuz field, the Ekibastuz GRES's are designed to burn coal with ash content to 55%. Correspondingly, at the same time the combustion of sulfer is increased and about 200 T/h of sulfur dioxide will enter the air. Methods of trapping the nitric oxides have not yet been developed and the possibility of suppressing their formation during coal combustion is also not yet clear. In this respect there is food for thought for the chemists and planning organizations. Drastic decrease in the formation of emissions of nitric acids and sulfur into the atmosphere is a task obviously not only and not so much for the production engineers, as for the scientists.

Start-up of the new power engineering facilities makes it necessary to protect the environment from thermal pollution. Experience has shown that exceeding by 8-10°C of the temperatures in the GRES cooling reservoirs versus the maximum natural temperature entails a steady disruption in the biological processes and results not in self-purification, but in self-pollution of the water systems. Algae generally develops in these reservoirs, so-called efflorescence of the water is noted. It inflicts great economic damage, causing overconsumption of electricity. Other biological disorders also develop which affect the natural life of the reservoir.

The Institute of Zoology of the KaSSR Academy of Sciences for the first time in Kazakhstan began hydrobiological studies on the cooling reservoirs in order to clarify the effect of thermal pollution on hydrobiocenoses and to formulate recommendations to eliminate the biological interferences with the use of these reservoirs. Jointly with the Institute of Power Engineering of the USSR Ministry of Power and Electrification, studies have been underway since 1977 on the direct-flow cooling reservoir of the Yermak GRES. It was established that despite the considerable path that the warm water travels on the canal to the channel before discharging into the main bed of the Irtysh (near Pavlodar) it was not completely cooled. It was found that under conditions of a summer with normal temperature regime, no major disorders occur in the hydrobiological regime of the channel, but under conditions of a hot, extreme summer, the water temperature in the channel can reach 36.5°C which has an immediate effect on the biocenoses and results in disappearance of some and considerable reduction in the population of other useful species, in particular, the filterers who play a role in self-purification of the reservoirs.

The appropriate recommendations were issued for the Yermak GRES cooler in time for improvement of the water cooling system and improvement in the biological regime of the cooling reservoir. They must be taken into consideration by the designers.

In the summer of 1979, similar studies were made on the closed-type cooling reservoir of the Ekibastuz GRES-1. In order to control "water efflorescence," the Institute of Zoology of the KaSSR Academy of Sciences recommended using a biological method, raising in this reservoir of certain plant-eating fish, in particular, the white Hypophthalmichthys and representatives of the Indian fauna buffalo fish. These fish species are capable of significantly suppressing the development of algae and survive the conditions of the cooler fairly well. The available food reserves of the lake can guarantee the formation of a commercial school of these fish. Their food value is higher than of local forms. Its is also important not to stop studies to search for the best methods of controlling the thermal pollution of our reservoirs, the more so because their use for fishing purposes will yield a considerable economic effect in the future.

Vegetation plays an enormous role in cleaning the atmospheric air. Our forests and green landscaping are the main suppliers of oxygen to the atmosphere. Therefore, landscaping of cities, workers settlements and industrial facilities is of primary importance. We should be concerned about this even now, especially taking into consideration the rates of construction of all the links in the Ekibastuz-Pavlodar power engineering complex.

The creation of protected forest zones, natural parks, in particular, the Bayanaul national park, preserves and sanctuaries acquires great importance in the Pavlodarskaya Oblast. Our task is to preserve for our progeny and for scientific purposes the standards of natural biocenoses. Study of individual ecosystems now will permit a better prediction, and this means, prevention of those negative changes that could occur on the earth under the influence of anthropogenic factors.

The scale of development of the Ekibastuz power engineering complex raises difficult, but at the same time quite resolvable tasks in controlling pollution of the environment, disorder in the ecological equilibrium in the region, and deterioration of the sanitary-hygienic conditions. One should only predict in advance the negative consequences and rapidly work out countermeasures capable of drastically reducing the consequences of the negative effect on the environment. Unity of science and practice must play the primary role here.

The most significant shortcoming in the use of nature is the branch, narrow-departmental approach to solving a number of the most important questions, including those referring to the Ekibastuz power engineering complex. Questions of the efficient use of the fuel-energy, raw material, water, land and other natural resources are interbranch problems. Therefore environmental protection in the zone of the Ekibastuz coal field with the adjacent territories and industrial centers should be classified as a problem of complex territorial planning, of environmental protection measures which must be coordinated by a single center, in this case, the KaSSR Gosplan, or even better, a special committee for environmental protection. It should be set up under the KaSSR Council of Ministers.

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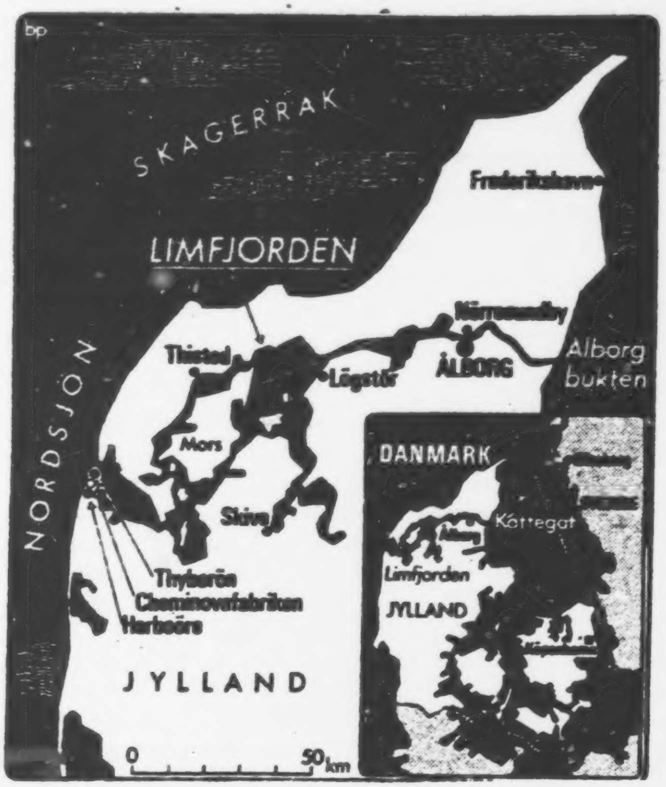
DENMARK

FJORD THREATENED AS SALT STORAGE EMPTIED FOR GAS RESERVES

Stockholm DAGENS NYHETER in Swedish 27 Jul 81 p 7

/Article by Bo Engzell/

/Text/ At least 50,000 tons of waste with large concentrations of dangerous nerve poisons, phenols and organic mercury from the scandal-ridden Cheminova Manufacturing Plant is threatening the famous Limfjord in Denmark. Biologists and industrial fishermen fear a catastrophe. The entire fjord's lobster population is already dead and the shrimp are gone too. Many oysters and large eel are also dying.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So far the largest scandal involving poisons in Scandinavia keeps growing. Now the fjord is also threatened by large amounts of salt that must be removed from an underground storage to make room for natural gas.

Poisons from the Cheminova Plant's waste storage are slowly leaking into Limfjord. The plant is located on a point near Thyboron, where Limfjord joins the North Sea. From this point, the "fresh-water" current flows into Limfjord, which empties into Alborg and Kattegat toward Sweden. Thus, the poisonous water is distributed throughout Limfjord.

But Cheminova is not the only source of poisons. Huge quantities of cadmium from a radio and television factory have been found in another part of Limfjord, for example. There are other serious instances of pollution near Alborg.

And now natural gas is emerging as a new dangerous threat to Limfjord. The gas will be taken from Danish oil fields near Esbjerg and stored north of Viborg near Limfjord, where huge amounts of salt are now stored underground.

But first the salt must be removed to make room for the gas. Some 260 million tons of salt will be washed into Limfjord!

"Within a large area of Limfjord its famous mussels are dying and conditions will be completely changed by the enormous quantities of salt," said biologist Flemming Madsen, a member of the so-called Cheminova Group. This group is working to disclose all environmental scandals and get the authorities to take measures to save Limfjord, among other places.

Many Threats

Hence, there are many threats to the famous fjord in northern Jutland, Denmark's "Nordland" with much unemployment.

"Many industrial fishermen have already been forced to give up fishing in Limfjord because poisons have killed the fish," said Johannes Noer, Hvidbjerg. He is spokesman for the Central Association of Limfjord Fishermen.

On the beach along the North Sea, across from the point where the Cheminova Plant is located inside Limfjord and where the poisonous waste was first dumped, the clean-up has now been completed. The result was more than 23,000 barrels of poisonous sand. The barrels are no longer at the plant; they will be transported to West Germany and deposited in salt mines in Hessen.

Poisons, however, cannot be destroyed, They seeped into the North Sea and killed many fish and sea birds. Direct release of nerve poisons due to accidents at the Cheminova Plant has compounded the problem. Nerve poisons are used in the manufacture of products designed to kill harmful insects.

The Cheminova Plant employs over 500--important jobs in a hard-pressed community--and has annual sales of 350 million kronor. Some 98 percent of the plant's production is exported, making it a very important industry in Denmark today.

During the clean-up of the North Sea shore, workers had to wear completely pressurized suits. They looked like space men working on the beach. Outside the plant, the mercury content has been measured to be 7,500 times greater than normal.

"Germany now wants to repackage the 23,000 barrels of sand, which also contained mercury and DDT, for greater protection. The content will be diluted," said Flemming Madsen.

The Cheminova Plant is not alone responsible for the poisonous deposits along the beach. The Danish government has been involved too. These poisons were dumped before the new environmental law came into being and before we really understood the danger of dumping poisons along the seashore. Today the area is sealed off with barbed wire. Although the poisons have been removed, there is a ghastly stench along the shore.

Many foreign tourists are fishing close to the poisoned beach and Cheminova's waste storage in Limfjord. Signs banning fishing are in Danish only. In the summer, Jutland is inundated by West German tourists in particular. "We are completely unaware of the dangerous poisons," several of them told DAGENS NYHETER.

"It is unconscionable of the authorities to do this," according to Madsen of the Cheminova Group. "All fishing must be stopped. The fish that is left is very dangerous to eat."

The clean-up of the North Sea beach cost over 23 million kronor. Cleaning up Cheminova waste hidden in an old plant foundation or placed in leaky concrete containers will be even more expensive.

"For instance, there are high concentrations of organic mercury that are really dangerous to the human nervous system," said Madsen. "There are also other very poisonous compounds formed in the chemical process."

Livelihood

Approximately 1,000 families make their living fishing in Limfjord. There has been controversy between the large canning industries and Cheminova.

"Cheminova's huge waste storage of at least 50,000 tons of waste containing dangerous poisons must be completely cleared away. For that matter, there could be far more poisonous materials than we suspect," said Johannes Noer, the spokesman for Limfjord fishermen.

"We will demand huge amounts of compensation from Cheminova. Many fishermen have lost their jobs. The death of lobster, for instance, was a heavy blow for us. Now even oysters are dying. We shall even demand extensive fishing protection measures. Our township cannot afford to lose any more jobs."

The Cheminova Plant was formerly located in Gladsaxe near Copenhagen. It was surrounded by controversy there too.

"Authorities were well aware of how dangerous Cheminova was. For that reason, they cynically dispatched the plant to Jutland where the people could not afford to say "no" to much needed jobs," said Madsen.

"Today, some authorities are just putting up a fight," he said.

"A decision to clean up the Cheminova waste in Limfjord cannot wait until fall," stressed Flemming Madsen. "That could lead to a catastrophe, a death blow to Limfjord. That must not happen. We must also investigate the extent of damage in several other sections of the fjord. Many of us are now demanding that. We have succeeded in awakening public opinion in Denmark with respect to the environment. That is at least one positive side to this wretched Cheminova incident."

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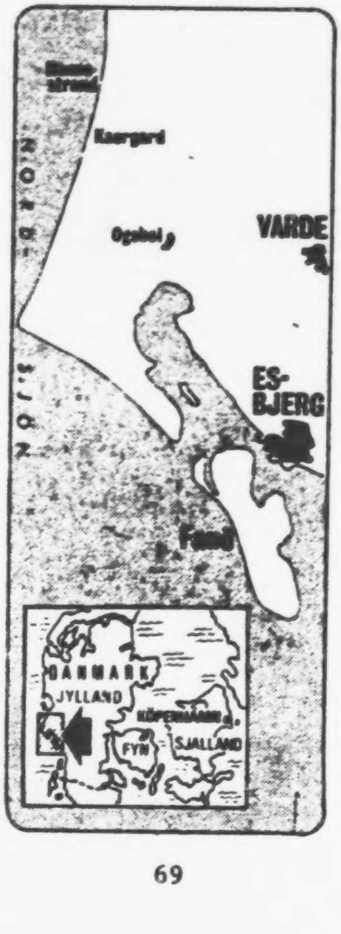
CSO: 5000/2161

DUMPING OF POISONOUS MEDICINE THREATENS JUTLAND COAST

Stockholm DAGENS NYHETER in Swedish 29 Jul 81 p 30

/Article by Bo Engzell/

/Text/ The disclosure of poisons being dumped in Denmark follows closely on the heels of the big Cheminova scandal. This time it concerns an excellent bathing beach in Kargard in West Jutland north of Esbjerg, where a manufacturing plant has dumped left-over poisonous medicines, phenols, and perhaps nerve poisons. These poisons are now leaking into the sea.


Kaergard
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KÖPENHAMN
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SJALLAND

"All dumpings will now be investigated. Clean-up is difficult and expensive, but still possible. More and more people and now demanding it," said Flemming Madsen, one of 15 biologists at Arhus University and a member of the now famous Cheminova Group. This group is leading the struggle for a better environment and is in the process of issuing a "partisan Bible."

The Ministry of Agriculture allowed a pharmaceutical plant to dump its waste water among the beautiful protected cliffs along the North Sea shore in the period between 1966 and 1973. Before that, the plant had dumped its waste water into rivers where salmon died and the mercury content became so high that all other fishing had to be banned.

The authorities then felt it would be better to dump the waste water near the seashore. Oksbols county, where Kargard is located, was not consulted. Some 300 to 400 liters of waste water were transported by tanker to the cliffs and dumped there. This water contained poisons from the manufacture of sleeping pills and nerve medicine.

Dumping Among Cliffs

Later it turned out that a chemical plant had also dumped its waste among the cliffs without permission to do so. It is believed that this dumping concerned waste from the production of insecticides and phenols that may cause cancer and allergies.

Through the ground water these poisons are now carried into the North Sea.

There is an enormous stench along a large section of the shore. Even at a considerable distance from the dumping site, there is a nauseous, brownish yellow, foamy and thick sludge along the shore.

This is water polluted by the poisonous materials that were dumped here. Some distance from the dumping site, West German tourists are bathing; they cannot read the sign written in Danish warning against bathing here. The sign is posted next to the dumping site.

German Sport Fishermen

Germans also engage in sport fishing along the shore. You see children on floating mattresses bobbing up and down along the shore. There are many vacationing families in this area. These tourists stay at a nearby resort hotel, live in camps or a few rented cabins.

When DAGENS NYHETER visited the area, only a few persons along the entire beach knew anything about the poisons dumped here among the cliffs.

"The Danish Environmental Board has decided to investigate the area where the waste was dumped," said Oksbols' mayor Harry Thomsen. "The pharmaceutical plant has permission to dump there. However, it comes as a surprise that the chemical plant has also used this area as a dumping ground."

Many people in Denmark are now demanding a better environment. They want to know where poisons were dumped before the new environmental law came into being. The government has also promised an investigation, not only of the Cheminova Plant's huge waste deposits that threaten all of the famous Limfjord, but of the Kargard case too. Demands for cleaning up the environment are growing stronger all the time. The action of the young biologists in the Cheminova Group is paving the way for greater environmental awareness.

Fishermen Struggled

"The environmental law will be revised. The Cheminova disclosure will make the law more stringent," believes Dorte Schmidt, a member of the Cheminova Group.

Many Limfjord fishermen struggled alone to no avail against the powerful Cheminova Plant and the authorities. Poisons from the plant with its dangerous waste deposits of at least 50,000 tons killed the fjord's lobster and fishermen lost their most important source of income. Large quantities of eel also died; oysters are dying and the shrimp has disappeared.

"Fishermen themselves were not able to effectively plead their just case. Poisons from the plant destroyed fishing, which is the livelihood of many families in North Jutland where jobs are few," said Flemming Madsen of the Cheminova Group.

He was one of the original 17 young biology students at Arhus University who a couple of years ago decided to form the so-called Cheminova Group. Arhus University now owns the poisonous plant.

The plant was donated to the university. Cheminova employs more than 500. It primarily manufactures insecticides that contain nerve poisons. It is this type of waste, among other things, that can be found in the huge waste deposits that threaten Limfjord. Cheminova has annual sales of 350 million kronor. The plant exports almost all of its production and is thus important to Denmark.

"Fishermen saw how sea birds and fish died en masse from these poisons. Laboratories also confirmed death by poison, but the authorities did not want to listen," said Madsen.

The Cheminova Group attracted lawyers and chemists at the university. The poisonous waste has been charted. After persistently trying to fight a number of cases, the government finally decided that the poisonous depot in the vicinity of the North Sea and the Cheminova Plant had to be cleaned up. That cost almost 25 million kronor. Some 23,000 barrels were filled with dangerous poisonous sand.

Poisons cannot be destroyed so the sand will be placed underground in West German salt mines.

Poisons Remain

But Cheminova's far greater, more dangerous and leaking poison depots inside Limfjord still remain.

"A catastrophe is threatening the entire fjord," said Madsen. "This waste must be removed quickly."

Biologists connected with the Cheminova Group are now working hard to effect that. They are gaining support all the time.

"But we are attacked from many quarters," Madsen emphasized. "We are accused of driving foreign tourists away from Denmark as a result of our disclosures. That is wrong. Those who have been silent and wavering are partially responsible for the fact that some tourists may have decided not to return to Denmark. This would not have happened if things had been handled differently."

"Partisan Bible"

"I never dreamt I would stalwartly address these biological environment problems in the course of my studies," said Dorte Schmidt.

The Cheminova Group has spent tens of thousands of hours on the struggle for a better environment. This group has traveled throughout Denmark speaking about the importance of cooperation between man and nature. It is now working on a "partisan Bible," based on experiences in connection with the Cheminova incident.

"There is frightful destruction of the environment throughout the world. Just look at how the Germans are dumping poisons into the North Sea. The environment cannot bear any more. Together, all nations must solve the pollution problem. We in the Cheminova Group do not want to kill the Cheminova Plant. The jobs there are needed, but the manufacturing process must be made "clean." That is possible there as well as elsewhere with the right will, albeit at some cost."

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OSLO PLANS NEW WASTE RECYCLING FACILITY

Oslo ARBEIDERBLADET in Norwegian 11 Aug 81 p 13

[Article: "Recycling of Oslo's Trash: Who Dares to Invest Half a Billion?"]

> [Text] Should Oslo invest half a billion to recycle paper, plastic and iron without knowing whether anyone will buy it? Should the municipality burn trash until it is known what can be sold and for what price? The city's bourgeois majority is willing to take the chance. The Labor Party primarily wants to wait on the recycling until profitability is more certain.

The planned facility for recovery and burning of Oslo's household trash, which is to be built at Sondre Nordstrand, will probably require an investment of about half a billion kroner. According to what ARBEIDERBLADET has learned, the firm Kvaerner Brug has offered to build Oslo a complete installation for 480 million kroner. The firm would be willing to participate in the financing and to operate the facility.

The question was on the blotter of the City Council last Wednesday, but after a recommendation from the Labor Party it was decided to postpone dealing with it. The bourgeois majority was prepared to decide the matter without delay. Only reluctantly did they agree to postpone it one week.

The Labor Party is very preoccupied with Oslo purchasing such a facility, which undoubtedly will require valuable resources. The problem of finding a new trash dump after Gromme is full was not considered. But to invest half a billion kroner without knowing more about the income side than the municipality has learned up to now is believed by the party to be worrisome.

Perhaps it is better to postpone the recycling portion (about 250 million kroner) until the paper industry has given clearer signals on how much reclaimed paper they are willing to buy and what price they are willing to pay. As the market is now, the municipality has no guarantee of making such a facility profitable. The losses can go up in the millions.

The state is said to have expressed its willingness to assume a considerable economic risk. Temporarily in the form of a loan guarantee, but later more directly by covering parts of the loan if the income is disappointing. We do not know how decisive this will be for the Oslo politicians' opposition to "selling the skin before the bear is shot."

The alternatives which stand out are: 1. The City Council asks Kvaerner Brug to deliver and operate a complete installation as soon as possible. 2. Recycling is postponed and sent out for a new round of bids when current. 3. A reduced recycling plant is delivered, in addition to a combustion plant. Kvaerner would probably guarantee this delivery without a new round of bids.

It is necessary that the municipality build a combustion facility as soon as possible. It is an important energy source for the remote heating system which will heat dwellings in this area. Remote heating systems are now constructed at the same time as dwellings. Temporarily all energy comes from electricity.

Chart on following page.

Caption: Recycling of glass and animal feed will probably be withheld from the first phase.

Key: 1. Flow diagram for a trash recycling plant
2. Coarse sorting
3. Burning
4. Pressing
5. Iron
6. Primary sorting
7. Color sorting
8. Glass
9. Sterilizing
10. Sorting vegetable/organic
11. Drying
12. Animal feed
13. Composting
14. Compost
15. Sorting plastic/paper
16. Regenerating
17. Plastic
18. Regenerating
19. Paper
20. Combustion oven
21. Processed steam
22. Remote heating

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NITROGEN FROM FERTILIZERS SEEN THREAT TO BALTIC

Stockholm SVENSKA DAGBLADET in Swedish 15 Jul 81 p 10

[Article by Lennart Lundegardh: "Importance of nitrogen underestimated"]

> [Text] Maybe it was a mistake to totally concentrate on the treatment plants' removing phosphorus from the sewage water. At least as far as the Baltic is concerned, it looks now as if the efforts also should have been directed toward nitrogen.

"The decisions must be reconsidered," says marine biologist Ragnar Elmgren of the Zoological Institution at Stockholm University. "There exists technology abroad for the removal of nitrogen, but it is expensive."

New research discoveries at Asko Laboratory and at the Oceanographic Institution at Goteborg University together present a new picture of the pollution in the Baltic.

At the turn of the century the Baltic was a clean and relatively low producing sea. There was plenty of oxygen even at the greatest depths. Since then it has gradually deteriorated. As of the end of the sixties, the deep water, i.e. below approximately 80 meters, has been totally oxygen-free in great parts of the Baltic.

When oxygen runs out all higher life forms disappear. The sea bottom fauna dies and the fish leave. At times almost half the actual bottom area of the Baltic has been affected.

In shallower areas, however, the bottom fauna has more than quadrupled in weight since the twenties.

This is caused by the Baltic actually having been fertilized, which has resulted in added production of plant plankton, which in turn has resulted in more food for the bottom fauna.

Gary Shaffer of the Oceanographic Institution in Goteborg has made comparing calculations of the oxygen content in the Baltic during the 20th century and concluded that changes in the water balance, for example through increased precipitation, cannot explain the present low oxygen levels.

The deterioration must be caused by increased oxygen consumption, the kind that results when oxygen is used up by the breaking down of dead organisms. This also indicates that contaminated discharges have caused the sea to become fertilized.

Man is therefore responsible for the present condition of the Baltic, and thus a more than 10-year long debate among the researchers can be concluded.

"At the same time as the low oxygen levels in the deep water area have eliminated spawning grounds for cod east of Gotland and threaten similar areas by Bornholm, much cod is now being caught in the Baltic," says Ragnar Elmgren. "It sounds contradictory, but can be explained."

"The food supply for the cod has increased dramatically. And a successful breeding year in the south Baltic has produced enough fry for the whole Baltic sea," he says.

But then, what about the nitrogen? During the last 5 years knowledge has developed both internationally and here at home, that, at least in marine coastal areas, nitrogen and not phosphorus is, what is called, the limiting factor, i.e. the substance that determines the size of the algae production.

In lakes, however, phosphorus probably plays this part.

"One cannot say that it was a mistake to remove the phosphorus from the sewage water. The damage might have been even greater today, had it not been done," says Ragnar Elmgren.

"But now the nitrogen reduction must receive high priority. We must do all we can to learn how the nitrogen content can be limited," he adds.

The contributing factors are great and difficult to control, because they are international: Polluted sewage water from the coastal regions, atmospheric precipitation, leakage from farming areas, etc.

This runs the risk of becoming an expensive proposition.

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PRODUCT CONTROL BOARD SANCTIONS CROP-DUST TESTS

Stockholm SVENSKA DAGBLADET in Swedish 16 Jul 81 p 9

> [Text] Wooded areas in many districts will this summer be sprayed from the air with chemical weed-killers although there exists a general ban on these poisons.

The Product Control Board has granted the agricultural school an exemption from the ban for the purpose of testing some new products against undergrowth. New spraying methods are also to be tested.

The areas which will be sprayed by airplane or helicopter belong to the Domanverk and are situated within the districts of Berg and Stromsund in Jamtland, as well as within the districts of Lindesberg and Overkalix.

In addition, ground spraying of the new products will take place in the districts of Uppsala, Halmstad, Mora, and Vindeln.

Important Test

"We consider this scientific test so important that we did not hesitate in granting an exemption from the general ban," Bo Wahlstrom, departmental head at the Product Control Board of the Conservation Department, tells TT.

"It is important to test new products practically. In this case it is a question of products with low poison content, and partly it concerns new procedures, which is not the least important aspect."

The weed-killers to be rated at the test are the registered product Roundup of poison class 3, the lowest class, as well as a couple of still not registered products.

Replaces Phenoxy Acids

Roundup is already so well known that it may be sprayed from the air during the tests, while the other two products may only be used in spot treatment on the ground. Roundup may in the long run come to replace phenoxy acids.

Last spring the government extended the ban against the use of chemical weed-killers in forests until the end of June, 1982. What will happen then is uncertain, but much indicates that the ban will become permanent.

"The Product Control Board may legally grant an exemption from the ban when necessary for scientific testing of a product; this is the paragraph we have applied in this case," says Bo Wahlstrom.

"We are otherwise restrictive in granting exemptions, but found this experiment which the forestry school is conducting important."

Spraying by Saw

A partly new spraying technique will be tried at ground treatments. A method has, among other things, been developed whereby the weed-killer is used at the time of manual clearing. The product is spread via the blade of the clearing saw, thus preventing the formation of shoots, which is a difficult problem.

Fully 60 hectares of the forests belonging to the Domanverk will be sprayed from the air with the spray Roundup. The tests will begin at the end of July, to be completed no later than September 15.

Warning signs will be posted in the areas in question, and the public will also be informed through notices in the local press.

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PLASTIC MAKERS HALT CADMIUM PRODUCTION IN ADVANCE OF BAN

Stockholm SVENSKA DAGBLADET in Swedish 31 Jul 81 p 7

[Article by Henrik Ekman: "Products already free from cadmium"]

> [Text] On 1 July next year the ban on cadmium in Swedish and imported products takes effect. But already a year in advance have the Swedish plastics makers to a great extent started manufacturing products free from cadmium.

Ingrid Jedvall of the product control board of the Conservation Department says this.

"Much has happened since the decision about the ban was made a year and a half ago. Swedish industry is now in a much better position than foreign industry."

Bertil Lundin of Sweden's Plastics Association is of the same opinion.

"Yes, the ban on cadmium will not mean any serious problems. The apprehension has quieted down. One has become used to the change."

"Certain things may be more difficult to manage," says Bertil Lundin "A suitable substitute for cadmium in stabilizers has not yet been found. The manufacturers have, however, been informed by the product control board that exemptions are to be expected."

Dye Problem

"One problem is dye," says Bertil Lundin. "How can we make sure that the imported dyes do not contain cadmium? The Customs will not assume that task. But on the other hand, maybe we can turn it into something positive: 'Buy Swedish cadmium-free dyes!'"

At the industrial welfare board, where the presence of, among other things, cadmium is analyzed continuously in control groups of people, decreasing levels of the metal have been observed. "We more and more seldom see urine and blood tests with increased levels," says Olof Vesterberg, associate professor.

One is also working intensely abroad on the substitution of nonpoisonous substances for cadmium. The criticism against Sweden's decision has disappeared.

Voluntary at First

"The Germans are investing a great deal, and Denmark is taking the same course we are," says Ingrid Jedvall. "But the Danes want to test a voluntary way first."

The ban includes cadmium as pigment, as stabilizer in plastics and for surface treatment. Accumulators and fertilizers are exempt from the ban. The content varies in fertilizers depending on the origin of the raw material, phosphorus. One manufacturer, Supra, managed from 1971 to 1978 to decrease the cadmium content in their products by 60 percent.

Cadmium can cause liver and kidney disorders.

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BRIEFS

DIOXIN LEVEL NOT DISTURBING--The dioxin content in the phenoxy acids of type 2,4-D, which are used against underbrush and weeds in Sweden, is in no way alarming, states the Conservation Department. The product control board at the department has analyzed all presently occurring products following alarming reports from Canada last winter. Researchers had there found high levels of poisonous dioxins in 2,4-D, a phenoxy acid earlier believed to be free of such pollutants. The product control board now presents reassuring information. No trace of the most poisonous, i.e. highly chlorinated dioxins, has been found in any product. Partially chlorinated dioxins, which have a significantly lower poisonous effect, were found in extremely low doses in two products. The companies selling these have been urged to contact their manufacturers in order to investigate the reasons for the levels. Before the present ban on spraying in the forests took effect, approximately 40 tons were used there per year. Farming uses 27 and households 4 tons. In farming the most common weed-killer is instead MCPA with 1600 tons per year. Earlier the phenoxy acid 2,4 5-T was banned because it contained dioxins. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 11 Jul 81 p 21]

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END

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Worldwide Report

ENVIRONMENTAL QUALITY

No. 323

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

No. 323

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VICTORIA'S EPA HAS LITTLE BITE, FACES INDUSTRY OPPOSITION

Melbourne THE AGE in English 5 Aug 81 p 13

[Article by Jennifer Byrne]

[Excerpts] Why, 10 years ago, Sir Henry Bolte created Victoria's first official conservation body is not easy to understand. It was not his sort of thing at all.

The legislation upon which the EPA is based is still intact, and still among the nation's toughest. It is still, nominally, Victoria's "autonomous and independent watchdog" on the environment. Yet, whether Sir Henry planned it this way or not--and who will ever know?--its very strength has proved a major weakness, both from within and without.

Other Government departments, aware of the potential power of the EPA, have followed the principle of Pandora's box: keep the lid down and contain the unknown. Were its potential less, it might be permitted more leeway. As things are, it remains but one section of the Conservation Ministry, which has but one voice in Cabinet, where the EPA has lost more fights than the SEC has power stations.

"It has always been a conciliatory body," explains one staff member. "It doesn't come down heavily on people and in this sense, it has failed to keep the faith of the public.

"Perhaps even the name has misled some people, by creating an expectation. It is a waste control agency and not a protector of the environment in the broad sense."

Over the 10 years, the EPA and its five delegated agencies (bodies such as the Dandenong Valley Authority and the Board of Works) have issued some 11,500 licences to discharge to air, land and water. Much of the early licensing proved to be unnecessary (one officer remembers licensing a small commercial gas heater in a suburban motel) and the number of licences has been reduced to around 4600 now.

Unfortunately, the EPA has not progressed quite as well with its State Environment Protection policies, thereby turning the licensing programme on its head.

The original idea was that the policies would set environmental standards for each region of the State and licences would be issued on the basis of those standards. It made a lot of sense, except practically, since only four final policies have been produced.

So, for example, while scores of licences have been issued for discharges into the Yarra River, the document which gives the total picture on the effect of the pollution has not yet appeared.

Mr Fraser's explanation is that while, ideally, the policies should have come first, the EPA's initial job had to be the control of discharges. "It was urgent and paramount. The backlog of pollution problems was not something that anyone was going to allow for long."

And the EPA has, by and large, been successful on this score. These are hard matters to judge, but the streams which run to Port Phillip Bay are generally cleaner than 10 years ago, and the bay is less of a sink for heavy metals. Corio Bay is no longer orange with iron. Unfamiliar fish are being caught in the upper reaches of the Maribyrnong.

There has been progress on the domestic sewerage backlog, and mercury is being phased out of industrial waste; similarly, lead from petrol. There are, at last, firm emissions policies for air and for noise. And for all its grumbling industry has, for the most part, made an effort to cooperate with the EPA.

The licence system is arbitrary. As an environmentalist, Andrew Herrington, points out, "they've succeeded in that everyone has one, but they are often weak documents. The standards are loose and there are numerous exemptions, often made on political grounds."

Even more flawed is the monitoring system, particularly monitoring of air emissions.

It is no surprise that there was one, a single one, successful prosecution for air pollution in 1979-80. The EPA was twice as successful with charges for breach of air licence: two.

It fared better in other areas but EPA is not, basically, a big prosecutor. It prefers a co-operative approach--"The correspondence" says one officer, "can go on interminably." The technical evidence, it claims, is hard to gather and even harder to stand up in court. Also, although this is rarely discussed, its own licences are open to legal challenge.

"There simply hasn't been a sufficient number of test cases even to get a proper interpretation of the (Environment Protection) Act. The question is whether the EPA should be so concerned about a couple of failures in court, or whether it should push for a fuller understanding of the law. Does it want to protect the reputations of a number of its own people, or the reputation of the environmental laws of this State?"

Whatever the explanation, the effect is the same: to demoralise the staff and to confirm the impression of a supine EPA. No one disputes that co-operation is the right approach in the great majority of cases. Yet the exception creates the rule--the familiar core of eight or 10 industries which continually breach their licences do immense damage, both to the environment and by example. They hang tough, they lobby, and they get away with it.

The EPA staff seems painfully aware of such criticisms. There is much talk of the "pro-development" atmosphere and of the difficulties these days of being green.

The tide, in other words, has turned. It swept away Premier Dick Hamer--who, by rights, should have created the EPA: it was his sort of thing absolutely--and there is a genuine fear that the same fate awaits the EPA. The Victorian Chamber of Manufactures has re-launched its campaign of four years ago to amend the Environment Protection Act. The Conservation Council of Victoria, of all bodies, is forming its own committee to protect the EPA--a watchdog for the watchdog.

CSO: 5000/7585

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APPEAL FOR FRANKLIN--A Tasmanian MP [illegible] come to Sydney to ask all Australians to help save the State's Franklin River and south-west wilderness area. Mr Andrew Lohrey, the Minister for National Parks and Wildlife, urged people opposed to the proposal to dam the river for a hydro-electric scheme to write to the President of Tasmania's Leiglsative Council. Mr Lohrey, 41, a former carpenter and arts graduate who became a member of the Tasmanian Government 10 years ago, has the task of taking his Government's message to Australia. He said on Monday that the Franklin was recognised nationally and internationally as one of Australia's last wild rivers. The river and south-west Tasmania are on the register of the Commonwealth Heritage Commission and are being considered for the UN world heritage list. But Lohrey said, the proposals to dam the river would destroy this heritage. The Tasmanian Government decided last year against a proposals by the Tasmanian Hydro-electric Commission to flood the Franklin River Gorge for a dam. It agreed, as a compromise, to allow the damming of the river upstream to save the Franklin River. But this proposal was rejected by the State's Upper House, the Legislative Council, which insisted that the Franklin be flooded. The Legislative Council has refused to pass the legislation for an alternative power scheme for the past three months and the crisis threatens to come to a head next month when Parliament resumes to consider its budget. The Upper House has power to refuse the Government supply, which, Mr Lehrey said, would leave his Government three options--call a general election, to hold a referendum or to capitulate on the Franklin, an option which was "not on." A referendum would not be the best answer, he said, because the Upper House would have to approve the terms of the questions put to electors. And a general election would not solve the problem because it would be overwhelmed by other issues. Mr Lohrey said the Tasmanian Government's compromise proposal for flooding only the upper Franklin would cost each Tasmanian about an extra $7 a year. He said the Tasmanian Hydro-electric Commission was urging its Franklin scheme without taking account of environmental factors and tourism. [By Joseph Glascott] [Text] [Sydney THE SYDNEY MORNING HERALD in English 29 Jul 81 p 10]

WILDERNESS PARK--A new national park at Cape Tribulation in North Queensland will encompass one of the most scenic and significant tracts of coastal rain forest wilderness in the world. Declaration of the new 15,000 ha park between Cooktown and Cairns was approved by State Cabinet yesterday. An official announcement is expected after the executive council has considered the proposal on Thursday. The new park, bordered by the Bloomfield and Daintree Rivers, will include two existing national parks at Thornton Peak and Snapper Island. The area is cloaked in dense rainforest. Cape Tribulation rain forests are considered of Australian and world significance and have been compared with those of Brazil. The park was first proposed at last year's World Wilderness Conference in Cairns. The expected confirmation of Cabinet's decision on Thursday will end months of controversy over the area. [Text] [Brisbane THE COURIER-MAIL in English 4 Aug 81 p 10]

RIVER POLLUTION FINE--Mobil Oil (Australia) was fined $3000 yesterday for having polluted the Yarra and the Maribyrnong rivers with oil. The company pleaded guilty to a charge of having contravened Section 39(1) of the Environment Protection Act. A deputy chief emergency officer with the Port of Melbourne Authority, Andrew Gavin Summers, told Footscray magistrates court that he inspected both rivers on 18 May this year and saw large concentrations of oil. Mr Summers said clean-up operations of 300 to 400 tonnes of a mixture of oil and water took five days and cost Mobil $21,000. A port security officer, Kieran McManus, told the court he saw oil flowing from a drain into the Yarra extending the full length of Holden Dock. Mr Ian von Einem, for the EPA, read to the court a statement from Mobil that holes in a tank had allowed oil to escape and that a separation system had overflowed, causing a two-kilometre oil slick in the river. A Fisheries and Wildlife officer, Charles Anthony Franken, told the court he saw two badly oiled seagulls which had to be destroyed; he saw 50 others affected by the oil. Mr Tim Morris, for Mobil, said the spillage was an accident resulting from a teething design fault in new equipment. He said $326,000 had been spent on the system in the past 12 months. [Text] [Melbourne THE AGE in English 6 Aug 81 p 6]

LOGGING SOLUTION--The Premier, Mr Wran, proposed establishing a special fund yesterday as a solution to the controversy over logging rain forests on the North Coast. At a meeting with the National Parks Association, he said the fund would be used to bring about timber to the North Coast mills and allow existing mills to re-equip to handle over timbers. Mr Wran's suggestion is a major breakthrough in the impasse between sawmillers and conservationists over rain forest logging. A plan to log the Washpool forest is the subject of an environmental impact statement by the Forestry Commission of NSW. The Government has stopped logging in the forest until the statement is assessed and a decision made. The executive secretary of the National Parks Association, Mr Peter Prineas, said after the meeting yesterday: "We are extremely heartened by the Premier's receptive approach to our claims about rain forest logging." [By Joseph Glascott] [Text] [Sydney THE SYDNEY MORNING HERALD in English 7 Aug 81 p 3]

NEWPORT EMISSION CHANGE--The Environment Protection Authority has moved to amend the licence for Newport D power station more than four years after a State Government's review panel ruled it should be only a 500-megawatt station. Tomorrow the EPA will advertise proposed amendments to the licence issued in 1973 for the SEC to operate a planned 1000-megawatt station. The changes will take effect in 45 days if no objections are received. The station has provided up to 500 megawatts for the power supply since at least last August and officially was brought into the system on 1 July. It has theoretically been subject to air and water pollution limits that were set for a 1000-megawatt station. The State Opposition and environmentalists have called the present licence "a licence to pollute." They argue the station could have exceeded emission limits for a 500-megawatt station if they had been set. The SEC argues that the original licence allows for emission limits to be "reduced proportionately." [By Paul Chadwick] [Text] [Melbourne THE AGE in English 7 Aug 81 p 6]

CSO: 5000/7585

INDIA

ENVIRONMENT DEPARTMENT MOVES ON POLLUTION CONTROL

New Delhi PATRIOT in English 15 Aug 81 p 5

[Text] The Department of Environment (DOE) on Friday announced it will assume direct responsibility for pollution monitoring and regulation, reports PTI.

The Department will take over administration of the Water Pollution Control Act and the legislation on air pollution control to be enacted in future.

A DOE announcement said a legal wing will be set up in the department to examine and draft necessary legislative provisions "for establishing biosphere reserves, protection of grazing lands, wetlands and catchment areas, exploitation of coastal waters and toxic substance control".

The DOE said it will also directly take charge of the conservation of critical ecosystems which would be designed as biosphere reserves and marine ecosystems which would be protected against human intrusion.

Such biosphere reserves would include "high altitude mountain areas, hot desert arcas, wetlands, coral, reefs, mangroves and also aesthetic and cultural sites."

It said environmental problems in India are due to poverty, ignorance and 'side effects' of rapid economic development.

It said that programmes involving public participation will be promoted. The DOE will also set up environmental management institutes "for research, training and case studies".

"A national committee on environmental planning would be constituted to serve as a policy planning 'think tank' to advise the Government at the Centre and the States," DOE said.

It will also set up 'task forces' to study specific environmental and ecological issues.

CSO: 5000/7065

MEASURES TO CONTROL AIR POLLUTION URGED

Lahore THE PAKISTAN TIMES in English 1 Sep 81 p 4

[Editorial: "Atmospheric Pollution"]

[Text] Our scientific mentors periodically warn of the baneful effects of continuous atmospheric pollution resulting from the smoke and fumes recklessly emitted by factories and vehicles in our urban environment. With reference to Karachi the keynote speech at a symposium of the Scientific Society of Pakistan dwelt on the hazards of toxic chemicals whose visibly damaging action could be observed in the tarnishing of the white marble of the Quaid-i-Azam's mausoleum. Chaotic urban growth and industrial waste constitute the major factors in the contamination of our daily surroundings; the presence of old smoke-belching motor vehicles of every description that continue to ply unchecked release dangerous quantities of deadly carbon monoxide harmful to both plant and human life. No survey has yet determined the corelation between the presence of lethal substances in the atmosphere with disease and death in our population. The pollution problem is highlighted most dramatically in Karachi containing half the nation's industry and a population touching six million, but the conditions to a lesser degree are repeated in all the country's cities.

Stringent measures are called for to check irresponsible behaviour leading to pollution. One heard some time back of an Institute of Environmental Studies which would recommend preventive and corrective action to the Federal Environment and Urban Affairs Division, but apart from the "celebration" of world environment days and dire warnings from the rostrum, the experts have done little to bring about an effective or sustained tackling of the problem. It is not enough to call for monitoring the quantities of tar and lead in the air we breathe, these unhealthy substances should not be present in the first place. In some countries throwing a used match in the street invokes a punitive fine. Here we can throw poison at our fellow men and there are just a few murmurs at science conferences.

CSO: 5000/4536

LETHAL PESTICIDES SEEN POSING THREAT TO ENVIRONMENT

Karachi BUSINESS RECORDER in English 25 Aug 81 p 1

[Article by Babar Ayaz]

[Text] Widespread use of lethal pesticides in the agricultural sector without adequate facilities for toxicological studies, poses a serious ecological threat, according to knowledgeable sources.

These sources observed that the residue of some of the highly toxic pesticides is passed to human beings through meat and crops which we consume.

They said that at present toxicological studies come from USA and European countries, which are good enough only to provide guidelines as the climatic and agricultural conditions of these countries differ from ours.

Experts explained that the extent of pesticide residue in crops and cattle in our conditions needs to be scientifically ascertained.

Meanwhile, the farmers complain that while the use of DDT is being tightly controlled by many advanced countries, due to its harmful qualities, it is being freely used in Pakistan.

Luckily, the use of DDT has begun to decline since last year, as the two public sector factories which produce DDT lack proper marketing facilities.

It may be mentioned here that the DDT is deemed hazardous to human health as its residue causes cancer and nervous disorder.

Although, the Government has taken a number of measures to educate the farmers through distributors and pamphlets, still environmental controls in this regard appear to be too inadequate.

Pesticides, no matter how lethal, are easily available in the open market and can be purchased without any licence.

According to some farmers the distributors are hardly educated and mostly are not bothered to warn them about the precautions while using dangerous pesticide.

However, the Government, it is learnt has directed Agricultural Extension staff to educate the farmers about the preventive measures in this regard.

It has also arranged a two-week training course in Multan in coming November under the auspices of ESCAP to train the pesticide distributors in pesticide handling and precautions.

Some of the highly lethal pesticides which are being imported in Pakistan are: BHC, DBCP, DDT, Heptachlor, Parathion, Paraquat and Toxaphene.

These pesticides are respectively suspected of the following health hazards: Cancer, cancer and male sterlity, cancer and nervous disorder, cancer, damage to fetus and nervous disorder, damage to fetus and respiratory system, and cancer.

CSO: 5000/4535

EROSION BY INDUS RIVER

Karachi DAWN in English 27 Aug 81 p 4

[Text] Multan, Aug 26: To control the erosion by River Indus near Dera Ghazi Khan, a comprehensive plan has been prepared which estimately cost to a total sum of 14 crore. The plan would be implemented in three phases.

A spokesman of the Irrigation Department said here that the plan has been submitted for the approval of the Punjab Government.

Under the first phase, a strong spur will be constructed near Dharama at an estimated cost of Rs 6.50 crore. Under the second phase a strong protective bund will be constructed at the end of Sameena East and Chootala villages at an estimated cost of Rs 5 crore. Under the third phase, another strong bund will be constructed at the end of area of Bhai and Haibat villages Mastool at an estimated cost of Rs three crore.

The spokesman said that this comprehensive plan has been prepared in three parts in the interest of the people of affected areas who have always been victimised by the erosion of River Indus.

He said that after the completion of Guide Bund on the right side of under construction Ghazi Ghat Bridge the area would be saved from further ruination by the River Indus.

A sum of Rs 9.19 crore will be spent on various schemes including construction of link roads in Sahiwal district during the current financial year.

This was disclosed at a meeting of the District Technical Review Committee, Sahiwal.

According to details a sum of Rs 4.70 crore will be spent on four on-going schemes while a sum of Rs two crore will be spent on other three on-going schemes. A sum of Rs 2.44 crore lakh will be spent on two new schemes.

CSO: 5000/4535

JOINT SYMPOSIUM ON ENVIRONMENTAL POLLUTION HELD

Beijing HAIYANG YU HUZAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Chinese Vol 12 No 4, 1981 p 382

[Article by Zhang Jingyong [1728 2529 6978]]

[Text] Chinese Society of Oceanology and Limnology, Chinese Society of Environmental Science, and the Environmental Science Information Network of Chinese Academy of Sciences held a joint Symposium of Oceanic and Limnetic Environmental Pollution on 17-21 Mar 81 in Guangzhou. Participants included more than 80 delegates representing 61 organizations, such as the State's Science Committee, the Environmental Office of the State Council, Chinese Academy of Sciences, the State's Oceanographic Bureau, related schools of higher education, marine products research units, and a few provincial and municipal environmental protection research organizations. A speech written by the Director, Zeng Chengkui [2582 0701 1145] of the Chinese Society of Oceanology and Limnology was delivered. Qiu Bingjing [6726 4426 4842], the Deputy Director of the Guangzhou Branch of Chinese Academy of Sciences and Guo Fang [6751 2455], the Vice Chairman of the Environmental Science Committee of Chinese Academy of Sciences and others also spoke at the meeting.

The problem of the environment is one of the five grave social problems with which all the countries of the world are intensely concerned. This problem is extremely closely related to the lives and production of mankind. It is the important subject requiring a proper solution in the process of modernization of the human society. The hydro-environment includes not only water but also suspended substances in the water, benthal silt, and marine organisms. Bodies of water, covering about 70 percent of the earth's surface are important storehouses of mankind's food and mineral resources. To protect the water environment is to protect the resources needed by men: they are ecological resources, biological resources, mineral resources, and water resource itself.

Since the 70's, not a few research organizations, schools of higher education, and various local environmental protection departments in China have surveyed the condition of environmental pollution and done a great deal of investigative research work regarding water pollution control and improvement of the water environment to obtain a large number of results. The symposium received a total of 137 survey and research reports. Of these, 25 papers were read at the general meeting, 17 papers at the group meetings. The contents of these papers involve some basic theories and application studies in the science of the ocean and lake water environment and the newest results of research in China concerning the protection of the ocean and lake water environment are introduced. They also analyze the present and future of this science. These rich contents provided valuable scientific exchange and the standard and quality of some reached a new high compared with papers of several years previously. The work, from investigation, to research, to treatment of the insecticide contaminated water of Yaerhu [Yaer Lake] of Hubei Province with an oxidization pond produced obvious results. This constitutes an important contribution to the control of pollution of China's lakes. The work on the quality evaluation of Bohai Bay and its self-cleansing ability produced an overall understanding of the condition of pollution of that part of the sea and it also was the first to utilize such new technologies as aerial remote sensing, fluorescence labelling, etc. to study the principle of dilution and diffusion of pollutants. There was also a preliminary discussion of [pollutant-containing]capacity of the environment.

The delegates made an analysis of the current condition of pollution of China's major rivers, lakes, and coastal seas. Some valuable opinions and suggestions concerning the prevention and control of water pollution and methods of overall planning, concentration of energy, emphasizing coordination, and developing scientific research in the protection of the water environment were proposed.

For the purpose of developing scientific research on water environment protection, strengthening scientific exchanges, and promoting the development of oceanic and limnetic environmental science, the conference resolved to establish the Chinese Society of Oceanology and Limnology Hydro-Environment Society. Following considerable consultation, a leadership structure for that society was elected. The first board of directors of the Chinese Society of Oceanology and Limnology Hydro-environment Society is composed of 35 persons, with Zeng Chengkui serving as the chairman, and Wu Baoling [0702 1405 6845], Wang Deming [3769 1795 6900], and He Yueqiang [0149 1878 1730] the vice chairmen.

6248
CSO: 5000/4090

ENVIRONMENTAL POLLUTION RESEARCH CENTER ESTABLISHED

Beijing GUANGMING RIBAO in Chinese 18 Jul 81 p 1

[Article by Zhang Jingde [1728 2529 1795]: "Scientific Basis For Controlling Environmental Pollution Provided"]

[Text] How harmful to human health is environmental pollution due to recurrent noise, vibrations, radiation, light and heat? How can they be effectively controlled? As approved recently by the State Scientific and Technological Commission, the Environmental and Physical Pollution Control and Research Center, composed of Sciences Research Institute and the Beijing Municipal Labor Protection Research Institute has been formed to study these problems.

This research center, located in Beijing, includes an environmental noise pollution control laboratory, an environmental radiation pollution (radiation, heat, light) control laboratory, an environmental physical damage laboratory, an environmental vibration pollution control laboratory and a theoretical environmental physics laboratory. The first three laboratories, already organized, have begun working. The research center is currently involved in the study of physical pollution in Beijing and other key environmental protection cities. It will also take up research projects concerning nation-wide physical environmental pollution and assist the Environmental Sciences Research Institute to plan, organize and coordinate the study of nation-wide control of physical environmental pollution. Its tasks for the current year include (1) a study of the noise levels in industrial environmental designing, (2) a general survey of noise and vibration in urban areas, (3) a survey of the distribution of electromagnetic radiation in Beijing and control measures, and (4) a study of the effect of noise on human health and the measures of control and treatment.

In recent years, the Beijing Municipal Labor Protection Research Institute has scored a number of important achievements which are helping such areas as Beijing, Jiangsu, Zhejiang, Shaaxi, Sichuan and Nei Monggol to control noise, vibration, and electromagnetic radiation. It has trained a contingent of key technicians and assisted in setting up factories to produce noise control equipment. Working with the Environmental Sciences Research Institute, it has achieved a great deal in ascertaining the impact of noise on human health. All these were factors favoring the establishment of the Environmental and Physical Pollution Research Center.

5360
CSO: 5000/4088

ENVIRONMENTAL POLLUTION CONTROL RESEARCH CENTER SET UP

Hong Kong ZHONGGUO XINWEN in Chinese 20 Jul 81 p 5

[Aritcle: "China Establishes Environmental and Physical Pollution Control Research Center"]

[Text] CHINA NEWS AGENCY, Beijing, 18 July--An environmental and physical pollution control research center organized by some of the researchers of the China Environmental Sciences Institute and the Beijing City Labor Protection Science Institute was recently established in Beijing.

This research center will carry out research and control regarding such problems as noise, vibration, electromagnetic radiation, light pollution, and heat pollution which are harmful to human health. The research center has an environmental noise pollution control research laboratory, environmental radiation (electromagnetic, heat and light pollution) control laboratory, an environmental and physical damage laboratory, an environmental vibration pollution control laboratory, and an environmental physics laboratory. The first three laboratories have already been organized and built and have begun work.

At present, this research center is concentrating on problems of environmental and physical pollution in Beijing and environmental protection in key cities and will carry out key environmental and physical scientific research projects of the entire nation, help plan and organize an environmental science academy and coordinate scientific research topics in the nation's environmental and physical pollution control.

In recent years, the Beijing City Labor Protection Scientific Research Institute has realized many important scientific research achievements in the control of noise and electromagnetic radiation. It has solved some problems of noise, vibration and electromagnetic radiation pollution in Beijing, Jiangsu, Zhejiang, Shaanxi, Sichuan, and Inner Mongolia and has helped establish factories producing equipment to control noise. It has cooperated with the Environmental Sciences Institute to obtain important results in the study of the effects of noise upon the human body and has created conditions for the establishment of the environmental and physical pollution control research center.

9296
CSO: 5000/4089

COMBINING ENVIRONMENT, ENTERPRISE MANAGEMENT FOR POLLUTION CONTROL

Beijing GUANGMING RIBAO in Chinese, 30 Jul 81 p 2

[Article by Jin Jiacheng [6855 0857 6134], "Hangzhou Refinery, Farm Chemicals Plant Effective in Controlling Pollution"]

[Text] By combining environmental and enterprise management to save raw materials and energy, the Hangzhou Oil Refinery and the Hangzhou Pesticide Plant have succeeded in recent years in reducing environmental pollution as they maximize their product output and the flawlessness of their facilities. These two chemical plants of Hangzhou have found out from actual practice that the control of the "three wastes" should not be left to any one unit. Only by combining environmental protection and the entire production system can it be done more satisfactorily. That is why the environmental protection unit of the Hangzhou Oil Refinery has to attend the daily production scheduling meeting to study the problem of water drainage by each workshop and enforce restrictions on water drainage at specific hours. The Hangzhou Pesticide Plant also imposes restrictions on the amount and density of the waste water drained by each workshop.

Both plants link the award of bonuses to achievements in environmental protection. The points required to qualify for the award are based on output, quality, depletion, safety, cost, equipment and environmental sanitation. There are monthly inspections to alert the staff and workers of the importance of environmental protection.

Both plants are very strict on the maintenance of their facilities. To cut down environmental pollution by escaping, overflowing, dripping and leaking fluids, there are bonus awards for achievements in facility management. They have launched drives to select "top rank posts" and leakage free areas. To qualify for a "top rank post," leakage must be under 0.2 percent.

The degree of flawlessness of the facilities of the Hangzhou Pesticide Plant has gone up from 83 percent two years ago to 90 percent while leakage has dropped from 0.38 percent two years ago to 0.2 percent today. The leakage rate at the Hangzhou Oil Refinery was 0.66 percent in January last year, but it has come down to 0.39 percent by December. There was only one unit qualified for the "top rank post" in January but 15 qualified by the end of last year. Determined to control the consumption of raw materials and increase the volume of output, these two plants have been recovering raw materials from the three industrial wastes. The Hangzhou Oil Refinery which has installations to recover all the discharged gas for furnace fuel actually recovered over 4000 tons of gas last year. By recycling water, it was able to cut down the discharge of waste water by 18.6 percent last year below the level reached two years ago.

5360
CSO: 5000/4088

TIANJIN DISCUSSES WAYS TO SOLVE ENVIRONMENTAL PROBLEMS

Tianjin TIANJIN RIBAO in Chinese 31 Jul 81 p 1

[Article: "Make Our City Into a Clean, Beautiful and Quiet City; City Government Holds Environmental Protection Work Conference, Proposes to Solve the Six Problems of Environmental Pollution in a Key Way Within 3 to 5 Years"]

[Text] Within 3 to 5 years, the six problems of environmental pollution in our city should be solved in a key way so that the face of Tianjin city can be improved noticeably. This was proposed by the city government at an environmental protection work conference held 28 to 30 July.

Li Ruihuan [2621 3843 3883], Li Zhongyuan [2621 0022 0997], and deputy mayor Yu Fujing [5713 4395 0079] attended the meeting, and Li Ruihuan and deputy major Yu Fujing spoke.

Li Chaobo [2621 1389 0130], deputy chief of the State Capital Construction Commission and chief of the Environmental Protection Office of the State Council, who came to Tianjin to participate in the meeting, also spoke.

Over 300 responsible persons in environmental protection of each ward, county and branch of concerned bureaus attended the meeting.

The conference made known the "decision to strengthen environmental protection work during the period of readjustment of the national economy" issued by the State Council and the spirit of the Jinan conference of the State Environmental Office, exchanged experience in methods of environmental work of the seven units of our city committee, the bureaus, companies and plants. It heightened the understanding of those attending regarding envrionmental protection work and conducted discussions on environmental protection planning during the "65" period in our city.

The conference held that the environment and natural resources are the basic conditions of life, they are the material source for developing production and a prosperous economy. Managing the environment well and rationally developing and utilizing natural resources are fundamental tasks in modern construction. They are basic benefits of the people and the masses. For several years, environmental protection work in Tianjin has made definite achievements, and some practical results have been realized in protecting water sources, protecting the atmosphere, alleviating city noise, planting trees and proving greenery, environmental management, controlling pollution, comprehensive utilization and scientific research in environmental protection, and monitoring of the environment. But the progress of management is not rapid, environmental improvements are not noticeable, and the pollution is still relatively serious, and this harms and threatens the people's lives, the people's health and agricultural and industrial production; it is a problem that urgently needs to be solved at present.

The conference emphasized that in managing pollution, we must first prevent the development of new pollution. All future capital construction projects to be built, expanded or rebuilt must stricity implement the regulations of the "environmental protection law of the People's Republic of China (draft)" concerning "the simultaneous design, building and implementation of facilities to prevent pollution and other public hazards in the main construction projects." Newly established large and medium-sized construction projects must include an environmental effects report during the first phase of construction, and the report must be reviewed and approved by the environmental protection departments before determination of the construction site. Any project that has not been reviewed and approved by the environmental departments will not be able to obtain bank funds, material from the materials departments, or land from the planning departments. Each level of leadership must strictly carry out their duties: the responsibility for efforts to go ahead with production without taking measures for management of pollution must be investigated. Technical projects, projects to dig for potential, to reform and to rebuild must also implement the principle of "the three simultaneous efforts"; the leadership of the level which approves the project must be responsible. Concerned departments must review the projects presently being built and complete the review within the third quarter, and when the projects enter into production, environmental protection problems must have been solved 100 percent.

The conference held discussions and proposed that the following six problems must be solved within 3 to 5 years through concentrated efforts in accordance with the present conditions and possibilities and starting out from economic gain to the entire city. 1) The comprehensive water treatment plant at Jizhuangzi must be constructed, work on pretreatment on the pollutants and poisonous substances of the 23 plants of the polluted water system of Jizhuangzi must be promoted, and their production must be changed, halted or relocated so that the waste water of all of Heping Ward, most of Hexi Ward and some of the plants of Nankai Ward can be treated. After the polluted water has been treated by the water treatment plant, it can be used by agriculture in the suburbs as a water source and a fertilizer source so as to reduce the amount of clean water used for farmland irrigation and to ease the shortage of water supply in the cities. 2) Starting from the protection of the water sources of the seas and rivers, the problem of pollution of the seas and rivers by industrial waste water released by the 29 factories must be solved in a key way. The enterprises and their managment departments must be urged to carry out emergency measures and strengthen managment in order to solve the problems within a specified time. Factories and enterprises which have pollution problems that cannot be solved and which have suitable conditions for readjustment should be closed down, terminated, combined, transferred or relocated. 3) Serious pollution and public nuisance problems of the more than 60 enterprises in the residential regions and the tourist regions must be solved through concentrated efforts. We must first reduce the degree to which pollution is a public nuisance, and then prevent the exacerbation of conflicts which will affect readjustment and safety. 4) Efforts must be exerted to solve the problem of smoke and dust. The entire city has rebuilt over 3,000 boilers, and there are over 4,000 more which will be completely rebuilt within 3 to 5 years. We must hasten the improvement of energy for civilian use, firmly undertake preparatory work for building plants to produce gas from coal, actively popularize the use of easily combustible honeycomb briquets, supply low-sulfur and low-evaporating coal to residents on a priority basis, and natural gas and liquid petroleum gas should be mainly supplied for civilian use. Smoke from power plants constitute one-third of all the city's smoke, and solving this problem must be firmly undertaken. 5) We must solve the problem of four odors from the synthetic chemical plant, the farm chemicals plant, the Zhongshanmen acid station, and the pulp manufacturing plants of paper manufacturers. Of these, the Zhongshanmen acid station must be relocated next year. 6) The city's noise problem must be solved. Before the national day, 75 percent of the nine types of motor vehicles must be fitted with silencers, and the rest should be fitted with silencers within 1 or 2 years. All vehicles which should be fitted with silencers but have not been so equipped should not be driven. There are already some ways to control industrial noise at present, and this problem should be solved well within 3 to 5 years.

The conference demanded that in drawing up the plans for the whole city, the spirit of the principle that the unit that pollutes should be responsible for managing its pollution should be followed; environmental protection plans must be drawn up according to each level; each enterprise must establish environmental protection agencies, draw up standards for inspection, establish a responsibility system and a reward and punishment system, and carry out periodic criticism, comparison and inspection. Self-construction and basic construction of environmental protection facilities must be done well, technical and operations training of environmental protection workers must be carried out, environmental monitoring and scientific research must be strengthened, and the facilities must be made complete. The conference expressed the hope that the entire city's broad masses and cadres will strive to make our city clean, beautiful and quiet.

9296
CSO: 5000/4089

TECHNIQUES TO HALT DESERTIFICATION CITED

Manila PHILIPPINES DAILY EXPRESS in English 21 Aug 81 p 5

[Article by Bernabe B. Paguio]

[Text] Some 60,000 square kilometers of useful land goes out of production each year due to desertification.

Directly caused by deforestation and loss of soil fertility, the process entails huge losses--some $15.6 billion a year--in agricultural production. It also adversely affects an estimated 50 to 78 million people around the world.

And the process continues to threaten many developing nations, prompting development agencies to work out the technologies needed to stem the advance of deserts.

One such agency is the United Nations Development Program which has underscored the need for desertification control techniques through Technical Cooperation among Developing Countries (TCDC).

A TCDC report details a wide range of desertification control technologies which could be shared among the affected areas. These techniques, categorized under seven broad headings, are forestry management and development, alternative energy technologies, livestock and range management, watershed management and water harvesting, sand dune fixation, remote sensing and transfer of information.

Forestry as a tool to combat desertification must be used for both environment protection and production, points out the TCDC report. Here, forest management techniques will be required.

"The greatest potential for the application of TCDC in forestry for desertification control at this time lies in the exchange of new approaches to forestry development," says the report.

Alternative energy technologies can slow down the desertification process. By reducing demand for traditional fuels such as food, dung and crop residues, destruction of forests could somehow be halted. Rapid population growth and high cost of petroleum products have put more pressures on those fuel resources and resulted in deforestation and loss of soil fertility, notes the report.

The most promising of the alternative energy technologies for dry areas of the Third World would appear to be more efficient cook-stoves, more efficient charcoal production, solar power, biogas and wind power.

Livestock and range management poses a problem to TCDC "because well-known technologies must be applied and adapted to local situations," observes the report.

"The great diversity of local cultures implies that social innovations cannot be transported in from one country to the next," points out the report.

Watershed management, along with "water harvesting" is recommended to increase the amount of water available from a given level of rainfall. Successful effort here can result in greater ground-water recharge and reduced levels of erosion, flooding and siltation.

Water harvesting or the practice of collecting and storing excess water during the rainy reason can extend the crop growing season and service livestock during the dry season.

In many cases, sand dunes have to be stabilized to prevent smothering of inhabited areas, roads, farms and vegetation. And here, technologies involve the slowing down of wind speed through the use of fences and breakers or vegetation. In China, mulching with clay, hay and gravel is common. So is mulching with heavy oils in Libya, Iran and Saudi Arabia.

Remote sensing or the gathering of information of vegetative growth, human and livestock population, water and movement of dunes will be inadequate as a total replacement if based solely on traditional ground methods, says the report. But remote sensing techniques can be cost-effective supplements to ground methods.

"As developing countries possess a great body of experience with anti-desertification technologies, benefits from those experiences can be multiplied through improved international exchange of information and domestic dissemination," adds the report.

On the whole, the effectiveness of anti-desertification technologies cannot yet be ascertained. Thus, the report suggests development of an evaluation system that would examine a selected number of cases. The experiences that the system would monitor could be shared among developing countries.

CSO: 500/4930-E

REFORESTATION BEGINS IN RIO REVENTADO BASIN

San Jose LA REPUBLICA in Spanish 9 Aug 81 p 2

[Text] With the coordinated efforts of several government agencies, plans are under way to reforest part of the lower Reventado River basin and to convert it into a wooded recreation area.

Entities such as the Costa Rican Tourism Institute [ICT] the Cargago Municipality, the Ministry of Agriculture, and the National Youth Movement are working together in the project that covers the lands along the eastern and western banks of the Reventado River up to Taras.

Officials in charge of the project estimate that with a small investment and technical assistance from those agencies in Cartago and the central government that wish to cooperate in the plan this country could have a new recreation area within a short time.

Meanwhile, the organization that has assumed primary responsibility for the project, the National Youth Movement, yesterday began large-scale plantings of saplings in the area.

According to Luis Alberto Zuniga, president of the Movement, thousands of youths throughout the central valley will participate in converting the dry terrain into a recreation area for the population.

Zuniga, along with the minister of energy, Fernando Altman, and the director of the ICT, Carlos Manuel Guardia, and dozens of youths, yesterday participated in the planting of the first saplings that will initiate the new project.

9015
CSO; 5000/2165

BRIEFS

HEREDIA DEFORESTATION--Heredia--Jose Maria Salas, governor of Heredia, has described the problem of deforestation in the northern part of his province as worrisome. As a result, the governor is trying to promote the establishment of municipal tree nurseries in cooperation with the Ministry of Agriculture and Husbandry (MAG) and to revive the celebration of Arbor Day, as in the past. According to Salas, the way trees are being cut down leaves the rivers with insufficient capacity for water runoff, and he fears that if the present rate of cutting continues, Heredia will suffer a "real ecological disaster" within a short time. He charged that while some municipal governments try to avoid the heedless exploitation of the forests, the lumbermen obtain the necessary permits from other government agencies. [Text] [San Jose LA NACION in Spanish 10 Aug 81 p 12A] 9015

CSO: 5000/2165

MEETING HELD IN CHIRIQUI AGAINST OPENING CERRO COLORADO MINE

Health Risk Seen

PA300414 Panama City Televisora Nacional in Spanish 2245 GMT 29 Aug 81

[Excerpt] You are looking at film of today's meeting in David, Chiriqui, participated in by representatives of the Popular Action Party, the Christian Democratic Party, the Agrarian Labor Party, the Liberal Party, the Independent Liberal Party, the Nationalist Liberal Republican Movement, the Popular Nationalist Party [Partido Nacionalista Popular], the Panamenist Party, the Republican Party and other civic organizations. They attended the civic, patriotic and national meeting called by the people of Chiriqui Province to discuss the issue of the Cerro Colorado project.

It was announced that the Catholic church, headed by Msgr Marcos Gregorio McGrath, had also been invited to the meeting; however, no church representative attended. An observer of the Democratic Revolutionary Party was present at the meeting.

During the meeting, the civic groups discussed opinions on the development of the Cerro Colorado project. The representatives of political parties and all types of organizations met with the committee in defense of Chiriqui in the studios of the Ondas Chiricanas Radio Station in David, to analyze the problems that the opening of the Cerro Colorado copper mines would bring.

It was stressed that there has been an ongoing struggle against the Cerro Colorado project since 1972, due to the ecological risks it entails for the highly productive region. Jorge Montezuma, representative of the Guaymi Indians, said that their survival is more important than the exploitation of the copper mines in Chiriqui. Montezuma said that the government deceived the Guaymi by telling them that the exploitation of the copper doesn't entail serious harm.

Participants in the meeting also said that the copper deposit should be left alone and that the next generation should be the one to decide on its exploitation, if there are adequate means by that time to prevent environmental pollution and harm to human life.

Dario Pitti stressed that the exploitation of Cerro Colorado would generate one job for each $1 million invested, whereas $1 million invested in agro-industries would produce 30 jobs.

Dr Gabriela Ortega said that the Cerro Colorado project is harmful to health, as it would increase the incidence of cancer in the region, would create many lung problems and would shorten the lives of human beings. Animal and plant life would also be seriously affected.

Carlos Landau offered alternatives to the Cerro Colorado mining project, explaining that Chiriqui has better resources than the mine. He suggested the establishment of an industrial free zone or a fishing free zone and the production of food.

The participants in the David meeting agreed that more food rather than copper is needed. It was stressed that if Cerro Colorado is exploited, there might in the future be a big copper coffin in a region where there is nothing to eat.

Conclave Rejects Project

PA011644 Panama City Circuito RPC Television in Spanish 1715 GMT 31 Aug 81

[Passages within quotation marks recorded]

[Text] The meeting held Saturday in David, Chiriqui, by various political, civic, business and labor organizations concluded with a negative vote against the realization of the Cerro Colorado mining project.

The auditorium of Ondas Chiricanas Radio Station hosted the meeting that gathered most of the country's distinguished political personalities to debate about the possible effects and consequences of the Cerro Colorado mining project. The speakers expressed their doubts over the guarantees claimed by the project and noted the serious ecological and technical implications of the project.

While the meeting was underway, a plane dropped leaflets containing a statement by a so-called committee for the development of Cerro Colorado, which, based on the experience of Canada, claimed that mining activity is compatible with agricultural activities as long as strict environmental controls are observed.

The meeting was attended by the majority of the political parties' leaders who expressed various opinions concerning the realization of the Cerro Colorado project. The secretary general of the Agrarian Labor Party, Luis Barletta, expressed his party's position as follows:

"The Agrarian Labor Party feels that although the Cerro Colorado mines are in the Province of Chiriqui, this problem concerns all Panamanians, not only of this generation, but also future generations. This is what we define as the dictatorship of the present, which is not taking into consideration the future generations. The political parties must take a stand to defend them. We believe that the opposition political parties here today are carrying out a patriotic and significant task."

Dr Ricardo Arias Calderon, speaking for the Christian Democratic Party, stated the position of his political organization as follows:

"The Cerro Colorado project is not a problem to be decided by the government or even by the state, as it affects the Chiriqui community and the national community as a whole. Therefore, any decision on this project must be made by an organization such as a high-level committee that includes not only elements identified with the government but also elements representing the political parties, including the opposition, and specifically representatives of the independent organizations and associations of the Chiriqui Province. Only a study carried out by such a high-level committee could determine satisfactorily for all whether the project is ecologically desirable."

Dr Arnulfo Escalona, representing the Liberal Party, voiced his group's position in the following manner:

"This is an encouraging meeting in which the active forces of this province have gathered, inviting the representatives of the political parties to learn about the activities of this committee and to shed more light on the Cerro Colorado mining project. We can inform you that the Liberal Party has appointed a committee which is studying the project and its implications."

Speaking for the Popular Action Party, Dr Carlos Ivan Zuniga said:

"We have the impression from what we have heard and read, and in view of the commitments already outlined by our party in a statement concerning this project, that the government has not properly released information about the projections of Cerro Colorado. Instead, it has engaged in a publicity campaign as if this were an energy and commercial product. We feel that there is still much government information missing, while the sectors opposing the project, in turn, have provided much more information. The Chiriqui communities have realized that the ecological consequences of this project are most harmful to the true authentic development of the province. In this respect, the government has failed to provide a satisfactory answer to this legitimate concern of the Chiriqui residents. We believe they have fully come to understand the situation, as has the Panamanian community as a whole."

Olimpo Saez, speaking for the Popular Nationalist Party, had this to say:

"Our opinion is that the Cerro Colorado project must not be carried out because of it ecological implications and because it will put the republic in debt."

Jorge Ruben Rosas, representing the Liberal Nationalist Republican Party [Partido Liberal Nacionalista Republicano], made the following statement:

"It is our opinion that although it is true that on the skirts of the Chiriqui ranges there are important natural resources such as a copper mine, which constitutes an asset to the republic, we must consider the existence of a number of well-founded doubts over its exploitation under the present circumstances."

Prof Segundo Gutierrez, in the name of the Republican Party, said:

"We have come to this civic-political conclave not only to attend, but also to meet and talk with the sectors that are going to be either affected or favored with this controversial project."

David Students Protest

PA020108 Panama City Circuito RPC Television in Spanish 1715 GMT 1 Sep 81

[Text] Some 30 students, all members of the Social Christian Movement, seized the offices of the Cerro Colorado Mining Development Corporation [CODEMIN] in David, Chiriqui Province, for 1 hour this morning.

The students, who attend several secondary schools in David, arrived at the CODEMIN offices at approximately 0900. They noted that this was the first of several actions which they plan to stage. Several students painted slogans on the walls of Los Leones building on Belisario Porras Avenue.

No major incidents occurred during the occupation which ended at 1000. National guard units did not report to the site.

According to our information, this is the first time that such an incident has occurred in David.

CSO: 5400/2200

SOUTHERN AFRICA COMMISSION ON SOIL HOLDS WORKSHOP

Maseru LESOTHO WEEKLY in English 14 Aug 81 p 3

[Article by Koena Kotsokoane]

[Text] A ONE-DAY workshop of the 13th Regular Meeting of the Standing Committee of Hydrology of the Southern African Regional Commission for the Conservation and Utilisation of the Soil (SARCCUS) last week recommended that member states should make full use of surface water before ground water sources are tapped.

The decision was taken after a study of several papers on the ways and means of alleviating drought problems among members countries. Lesotho participants presented five papers on water supply and drought in the country and their particular effects which was temporarily last year at the National University.

TOUR

The sixteen participants including Botswana, Malawi and South Africa toured various gauging sites and water supply works including the Phuthiatsana River and Ox Bow in the northern district.

Earlier on, the Permanent Secretary for Water, Energy and Mining, Mr. T. Makhakhe, said that it was through the science of hydrology that the water resources potential of Lesotho could be better exploited "because without water we cannot envisage any form of life or long-term development."

He said that hydrology — a new branch of science — was the corner-stone of long-term development. He therefore urged the technical and professional cadres in this field to pass on their technical know-how to the ordinary man in the street for the improvement and betterment of his standard of living.

LESOTHO

Lesotho has been re-elected to the chairmanship of the Standing Committee for Hydrology while Swaziland became the vice-chairman.

They will serve for a period of two years.

The 14th Regional Meeting will be held from August 9-13 next year at a venue still to be decided.

In an interview later, the chairman, Mr. S. Mokhoalibe, said that emphasis was being laid on the training of technical hydrological assistants to improve present services.

He said training would be conducted at the Hydrological Training Centre near Pretoria for two weeks or so.

WORKSHOP

He also said that there would be a joint workshop in June next year for the Standing Committee for Hydrology sub-committee, agricultural engineering and land use as well as planning at the Hydrological Research Centre, in the same city.

There will also be a tour of Bethlehem in the Orange Free State to look at land use and agricultural engineering and another tour of Maritzburg in Natal to study land use and management research areas.

CSO: 5000/5056

INDIFFERENCE TO AIR, WATER POLLUTION CONTROL NOTED

Maputo NOTICIAS in Portuguese 4 Aug 81 p 1

[Text] By installing the proper control mechanisms, one of the capital's cement plants has decreased pollution and improved production. Other production plants, however, have not followed its example.

In fact, the Matola Cement Company has reinstalled its filtration system to lower the amount of dust discharged during its operating process. However, numerous enterprises which work with toxic products on the outskirts of the capital continue to ignore the precautions prescribed to reduce air pollution and are thus endangering thousands of lives.

With the Matola Cement Company's filtration system in operation air pollution has been reduced in the area of the plant; also, the danger to which dozens of workmen were being exposed daily by dust inhalation during their work has been reduced.

Data provided our reporters by cement plant manager Issuo Omar Issuo also revealed that the soon to be completed installation of a new automatic line in the bagging section will completely eliminate the cement dust now found on the finished product with which dozens of plant hands work for 8 straight hours.

Besides freeing the workmen from the dust to which they are exposed, the new automatic bagging line will obviously increase the output of cement-bag loading for the railroad cars which is still done manually.

According to findings of studies made by the Ministry of Health Ecological Research Group, the dust raised in the cement plant can cause lung, skin and eye diseases.

Among the 36 workers who underwent medical examinations during the past year, 6 had various infections. Statistical data furnished by the Ministry of Health Ecological Research Group on the findings obtained from an investigation made at that plant show that the volume of dust is quite high.

We also learned from the Ecological Research Group that a great many companies on the outskirts of the capital dispose of large quantities of waste material in Maputo Bay without proper technical treatment. Texlon, for example, is one of the plants which, after having its polluted air decontaminated, is disposing of its chemical residue in the Matola River without observing the prescribed treatment.

Also the insufficiently treated smoke from the hotel and transportation industries is in large measure affecting the pollution of the city's air.

8870
CSO: 5000/5047

KWAZULU PLANS LARGE GAME RESERVE

Johannesburg THE STAR in English 22 Aug 81 p 2

[Text] DURBAN — kwaZulu is planning a huge new game reserve. It has announced the creation of a vast 206 000 ha conservation area in Maputaland which is likely to prove one of the foremost attractions of southern Africa.

This was confirmed today by the Chief Minister, Chief Gatsha Buthelezi, who said that a detailed ecological survey had been carried out and a management plan drawn up for submission to the kwaZulu Cabinet.

The conservation area will contain a large number of log cabins for tourists, as well as a number of wilderness camps. There will also be camping grounds, fishing camps and a lodge on the shores of Lake Sibayi.

"I believe it will be one of the finest conservation areas in the whole of southern Africa. It will incorporate a great diversity of rare and endangered fauna and flora which do not occur anywhere else in South Africa," he said.

Chief Buthelezi said the Conservation area was in the shape of an inverted U stretching along the border with Swaziland and Mozambique and it included the entire coastline from the Mozambique border to Sodwana Bay.

The western part of the conservation area contains the spectacular gorges of the Pongola, Ingwavuma and Usutu rivers. Two wilderness-type camps are proposed for each of the three gorge areas.

A lake resort is planned in the south along the banks of the Jozini Dam.

It is possible that game will be introduced into an area near the dam if agreement can be reached to link it with Pongolo Reserve, run by the Transvaal Nature Conservation division.

The present Nduma Game Reserve is likely to be extended by moving the existing western fence considerably further into the Usutu tribal area.

Rare game species including roan antelope, sable, tsessebe and red hartebeest are likely to be introduced in a fenced area south of Lake Sibayi. The remaining herd of about 100 elephant will be protected in the proposed Tembe elephant reserve which will form part of the planned conservation area.

"The declaration of this conservation area will go hand in hand with a rural development scheme for the whole of Maputaland and is designed to improve the quality of life of the people," said Chief Buthelezi.

The proposed Maputaland conservation area is more than twice the size of the Umfolosi, Hluhluwe and Corridor game reserve complex.

"The whole plan will call for enterprising management which is quite unlike the present preservationist policies adopted by other conservation bodies in South Africa.

"But I believe that our conservation division has the will to accept the challenge to link conservation with the development of people and I am confident that we will succeed with this pioneering work," Chief Buthelezi said.

It is proposed that several thousand people living within the conservation area will be allowed to stay under controlled conditions. Only a minimum number will have to be moved.

This will be done with the people's consent and they will be given better land to settle on alongside the Pongola River.

The development plan for Maputaland has been drawn up by Dr Ken Tinley and Mr Willem van Riet.

One of the key recommendations is that the Ndumu and Mkuzi game reserves plus the Sodwana recreational area be used as resource areas to develop Maputaland.

All three areas are at present under the control of the Natal Parks Board.

CSO: 5000/5056

SEA DISPOSAL OF SLUDGE UNDER DISCUSSION

Johannesburg RAND DAILY MAIL in English 17 Aug 81 p 2

[Text] THE Water Research Commission has recommended the sea as the most logical and economical place for the disposal of sewage sludge.

The recommendation comes five years after a major American survey advised against the disposal method, and also contradicts a recent Council for Scientific and Industrial Research (CSIR) study.

The commission's annual report tabled in Parliament last week carried the recommendation and said that "although many coastal towns and cities are well situated in relation to the use of the sea as a means of disposal of sludge, none specifically use this method".

Sludge disposal is being researched by the commission, which has arranged for a project by the Durban City Council with assistance from the CSIR.

No damage

The sea was recommended "where oceanographical and topographical conditions are favourable". The report claimed that "properly engineered and controlled sea disposal should do no damage".

A two-year monitoring programme had been set up to check any changes which might occur in the sea surrounding the discharge area and possible contamination of shellfish, the report said.

However surveys of seafloor conditions around marine sewage outlets at Hout Bay and Green Point, carried out two years ago by the National Research Institute for Oceanology, found severe pollution.

Divers found the downstream area of the Green Point outfall a marine desert in which the sea floor was thickly covered in a "pulpy brown sludge". Mussels, sea anemones and other seabed creatures had been wiped out.

CSO: 5000/5056

DDT EXPERTS CHALLENGE RESOURCES BOARD'S DATA

Salisbury THE HERALD in English 5 Sep 81 p 7

[Text] A committee of experts has found that the Natural Resources Board data on DDT is "statistically not significant" the Minister of Health, Dr Herbert Ushewokunze, told the Assembly.

Answering a written question from Mrs Julia Zvobgo (ZANU-PF, Midlands) on what steps the Ministry of Health intended to take on this issue to protect public health, Dr Ushewokunze said that in an attempt to formulate a policy on whether to ban or continue the use of DDT, a department in his ministry had called together a committee of experts from various fields.

After two meetings of the committee, Dr Ushewokunze said the following points emerged:

--That the Natural Resources Board's data was statistically not significant.

--That a monitoring exercise must be conducted regionally.

--That organisations like Devag and commercial company's staff must be encouraged to promote the use of substitutes.

--That interministerial discussions be held before a decision is made.

The ministry considered it necessary to maintain the tsetse fly and mosquito control programmes, said Dr Ushewokunze.

If Zimbabwe was used for experimental purposes in control, even under the umbrella of aid from various governments, and should these fail, the population would be exposed to unknown hazards, he said.

The minister also pointed out that should DDT be banned there might not be enough foreign exchange to buy other more expensive substitutes.

Dr Ushewokunze said the main advantages of DDT were that it was cheap and effective, it was long lasting with a good residual action, it was easily applied and it was relatively non-toxic to main. It had the same toxity level as aspirin, he said.

Disadvantages were mainly detrimental ecological effects because non-target insects could be killed and upset the natural balance. DDT and its metabolites could accumulate in the fatty tissue of living organisms.

DDT absorbed through foods such as vegetables, cheesefat, butter, meat, fish and eggs could affect the nervous system, liver, hormonal and enzyme systems. Agriculture had used 300 tonnes this year, while a total of 700 tonnes was used for the control of tsetse fly and mosquitoes.

CSO: 5000/5057

ZIMBABWE

BRIEFS

DDT CONTAMINATION REPORT--Part of a report published on Tuesday of Mr Ron Thomson's speech to the Tsatsi Farmers' Association on DDT has been wrongly construed by some people. A paragraph stated Mr Thomson had been told by the Government analyst that findings of two very high levels of DDT in human body fat might be the result of laboratory error. The analyst was in fact worried about DDT contamination of the containers beought from the mortuary with samples collected by people outside the laboratory staff and his control. Mr Thomson praised the laboratory and said he trusted the high levels they found in the samples were in fact correct. /Text/ /Salisbury THE HERALD in English 28 Aug 81 p 12/

CSO: 5000/5055

RESEARCHERS FOR FIRST TIME FIND DIOXIN IN BALTIC FISH

Stockholm DAGENS NYHETER in Swedish 11 Aug 81 p 20

[Article by Lars Hellerstedt: "Environmental Poison Dioxin Found in Baltic Seal and Salmon"]

[Text] For the first time the environmental poisons dioxins and furans have been found in wild living animals. Researchers at the University of Umea have found the poisons in seal and salmon from the Gulf of Bothnia and the Baltic.

Furans and dioxins have been difficult for the chemists to discover.

Prof Christoffer Rappe has, together with American and Swiss researchers, developed a method to discover very small levels of furans and dioxins in environmental tests. Dioxins are the kind of chemical substances which caused the environmental disaster in Seveso in Italy. The most poisonous furan is one-fifth as poisonous as the most poisonous dioxin. The poisons are closely related.

A seal, caught in the Haparanda area, and four 5-kilo salmon from the Umea river have been examined at the University of Umea. The salmon had spent a couple of summers in the Baltic.

"We have found very low levels of furans and dioxins in salmon and seal. The levels are not alarming; I, myself, dare continue eating salmon. But the fact that the poisons are found in the animals is alarming and may indicate a dangerous development," Prof Rappe says to TT [Tidningarnas Telegrambyra].

"Until now I, myself, have organized the investigation. But the Conservation Board has given a grant for continued investigation. It is important to follow the development to see if the poisons increase. This could in time lead to an environmental disaster."

Furans and dioxins are made in two ways and are added to the Baltic in two ways, the researchers believe.

It is known that polychlorinated biphenol (PCB), which is used in some large condensers and transformers, when heated can produce furans and dioxins via oxidation.

PCB is banned in new plants, but may be used in older ones. The life span of condensers and transformers is long, about 30 years. Therefore, PCB is brought into the Baltic via the streams from land.

The two environmental poisons are also produced at the combustion of PCB and chlorinated phenols. PCB is brought by the air to the Baltic.

The dispersal is limited. The poisons cannot be brought across the Atlantic to Europe, for example, because sunlight breaks them down.

The latter is of current interest, as it has become pertinent to burn chlorinated hydorcarbon at SAKAB's plant in Norrtorp, after West Germany refused to accept the environmental poisons from BT-Kemi in Teckomatorp.

"We know that furans and dioxins are broken down slowly in the body. In 1968 a catastrophe occured in Japan. Twelve hundred people eat rice oil, produced through a heat exchanger with PCB. The heat exchanger, which was used to heat the oil, leaked PCB into the oil and with it furans. Still 12 years later, furans are found in blood tests of the victims," says Rappe.

"Our method to measure dioxins and furans has been used in the United States of America. There the poisons have for the first time been found in a type of turtle in the Hudson river and the nearby Husatonic river, as well as in fish in the great lakes on the Canadian border."

"The levels there have been 10 to 100 times as great as those in the Swedish finds," says Rappe. "The discharges into the rivers come from two factories nearby, which make transformers and condensers."

At first the poisons were found in seagull eggs by the great lakes. In connection with heavy discharges of sulphur dioxide in the lakes, a violent controversy developed between the United States of America and Canada. Canada is particularly upset over these discharges. But an improvement is unlikely, since the president of the United States of America, Ronald Reagan, has stated that environmental regulations may be reduced to help industry.

Prof Rappe's analysis has been reported in the international scientific journal, NATURE.

"Our future measurements will include fish, seals, and birds, to determine how the poisons move in the food chain. The whole Baltic will be surveyed."

"We do not believe that the greatest contaminations are in the Gulf of Bothnia, but in the southern parts of the Baltic. One of Russia's largest production sites of electrical equipment with transformers and condensers is situated in Tallin."

"The salmon which migrates around the whole Baltic is an excellent subject to investigate, as the health of the salmon is a measure of how sick the Baltic is," says Prof Rappe.

9843
CSO: 5000/2164

WOOD-IMPREGNATING WORKS DISCHARGING ARSENIC IN WATERS

Stockholm DAGENS NYHETER in Swedish 13 Aug 81 p 11

[Text] A new environmental disaster threatens Sweden next year. If the ground around the 350 wood-impregnating works in the country are not limed, large amounts of arsenic may be deposited when the spring flood comes in 1982. The most exposed areas are on the west coast, in west Dalarna and in Halsingland.

"The situation can become very serious if counter-measures are not employed before the spring flood next year," Erik Persson of the Conservation Board says to DAGENS NYHETER.

It is the increasing acidity that is the big problem. Low ph values will deposit arsenic in the ground and the streams and threaten the ground water.

"The worst situation is at the closed wood-impregnating works. One can easily control the activity at the works that are still in operation," says Erik Persson.

"As early as during the fifties there were no doubt several arsenic deposits in streams at the smaller wood-impregnating works."

The worst situation is on the west coast, in Halsingland and in west Dalarna where the lime content is low. Vastergotland, Narke, Jamtland and Gotland are, however, faring better.

In Falun the board of health has found frighteningly large amounts of arsenic at the Televerk's now closed wood-impregnating work at Kallviken. Eight kilos of arsenic per cubic meter soil have been found in the mud separator.

"There is lots of arsenic at a depth of half a meter, certainly several thousand tons," says Per Nordin, inspector for the board of health, to DAGENS NYHETER. The arsenic has entered the mud separator via broken concrete pipes which were put down already in 1945.

Just east of Falun, in Backa, the Televerk has a wood-impregnating plant for telephone poles.

Falun district has for a long time demanded extensive control measures. The Televerk has appealed, but agreed surprisingly last Wednesday to bury concrete pipes for continuous testing.

The Televerk has also appointed a group of experts to study the effects of continuous rain on an already erected telephone pole.

Erik Persson, who gave the alarm about the danger of arsenic at the 350 wood-impregnating works last year, has now been comissioned by the Conservation Board to survey the presence of arsenic in these places.

He tells DAGENS NYHETER that it is impossible for the Conservation Board to administer, by itself, the enormous "Operation liming" which is called for. He says that the County Government Boards and the districts must also take part.

9843
CSO: 5000/2164

GOVERNMENT TO ALLOW SOME CONTINUED SPRAYING WITH CHEMICAL

Stockholm DAGENS NYHETER in Swedish 20 Aug 81 p 56

[Article by Thomas Michelsen: "Forest Spraying Not To Be Completely Banned"]

[Text] The government will propose a ban on the chemical control of underbrush in a proposition during the month of September. This does not, however, mean that the phenoxy acids are never to be sprayed in the forests, because the ban will not be absolute. A governmental authority will be able to allow exceptions, exemptions, from the ban on spraying.

Minister of Agriculture Anders Dahlgren explained this at the Forestry Association's excursion in Hudiksvall last Wednesday.

The minister of agriculture did not want to give more specific information about when spraying will be allowed and under what conditions. But one reason for exemption would be, as he mentioned, lack of manpower to manually clear the forest.

One of the participants in the Forestry Association's excursion suggested that all of Norrland be exempt from the ban on spraying. Dahlgren rejected this definitely. There must be a restrictive attitude toward exemptions, otherwise there is no ban, he said.

In the debates on phenoxy acids, the Social Democrats have, among others, proposed that the districts should be given the right to veto. They should decide whether forest spraying should be allowed or not within their districts. This approach was totally rejected by the minister of agriculture. If the districts are to decide, we run the risk of having as many different kinds of forestry policy as there are districts.

The districts are to be heard, but it will be a governmental authority which will decide who can spray and where. Either the Forestry Board or the County Government Board will get this responsibility.

There were many demands to be allowed to spray among the participants in the forest excursion. Many mentioned that this was the only way to solve the clearing problems in forestry.

"The problem of leaves is the greatest problem in Swedish forestry today," the chairman, Director-General of the Forestry Board Bo Hedstrom, pointed out.

There is at present a temporary ban on all forest spraying. This temporary total ban will thus, according to Dahlgren's proposal, be abolished.

9843
CSO: 5000/2164

BRIEFS

NEW SEA-POLLUTION LABORATORY--The Institute for Water and Air Research, IVL, will, in December gather its, at present, scattered resources at Karlskrona fishing harbor on Salto for research in sea pollution. The Institute for Water and Air Research, which is half owned by the government and industry, has today the greater part of its marine biological research located in Studsvik, outside of Nykoping. It is chiefly involved in the effects of oil discharges and the methods for controlling them. The 10 researchers who, at the end of the year, will start working at the new laboratory which is under construction in Karlskrona, will, however, also research the utilization of sea resources, primarily fish production, but also algae cultivation saturated on the east coast. "One reason why we choose to gather only in Karlskrona is that the east coast around Nykoping and Stockholm is saturated with marine research stations. There is none on the south coast," says Olle Linden, head of the IVL laboratory in Studsvik. The location will probably not mean any new jobs for the Karlskrona population. It is a question of qualified researchers who will transfer from their present places of work. But when we earlier similarly established small laboratories, if often happened that other small businesses grew up as a result of our activity. So there can certainly be some stimulation brought to the area," says Olle Linden. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 7 Aug 81 p 7] 9843

VOLVO'S CHEMICAL DUMPING CONTINUING--The County Government Board in Goteborg accepts that Volvo dumps up to 3900 tons of chemical compounds into the air every year from the plants in the Torslanda area on the Hisinge. The County Government Board has, for a considerable time, been investigating Volvo's dumping and has now sent its statement to the licensing board for environmental protection, which will now examine Volvo's activity in Torslanda. The acceptance by the County Government Board does not, however, occur without reservation. The board demands that Volvo takes part in a 2-year program of investigation. With this as a basis, the licensing board will again examine Volvo's dumping. At this time it will be a question of the technical and economic conditions of reducing the dumpings even further. One important part of the investigation is the experiments at the Tuve plant in purifying the discharges through charcoal filter technique. If that method works well, it should be possible to use it to reduce, for example, the large discharges from the spray boxes at the Torslanda plants. According to Volvo, the situation may also be helped by the development in the lacquer field being expected to move quickly in the next 5-year period. The amount of solvents in the lacquers can probably be reduced considerably. That reduction is necessary, the County Government Board points out to the licensing board. The environmental stress on "Volvo's piece" of the Hisinge is already now difficult. Other things that are to be part of the investigation are deeper studies of what is being dumped and how it is dispersed. An evaluation of the risks of occasional dumping is also being sought. [Text] [Stockholm DAGENS NYHETER in Swedish 11 Aug 81 p 20] 9843

CSO: 5000/2164

END

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2 October 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 324

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WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

No. 324

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BALTIC COMMISSION REPORT: SEA LIFE ENDANGERED

Stockholm SVENSKA DAGBLADET in Swedish 15 Aug 81 p 7

[Article by Henrik Ekman]

[Text] International commissions are usually a haven for compromises. The Helsinki Commission for the Protection of the Baltic Sea is no exception. However, the member nations have actually agreed on a description of the situation in this inland sea.

It is an extremely cautious document. No guilty parties are pointed out. Words such as "may" and "partially" are common.

However, this does not alter the fact that the seven nations--Sweden, Finland, the Soviet Union, Poland, East Germany, West Germany, and Denmark--have agreed that the situation is critical.

The National Environment Protection Board in Solna is satisfied.

"This is a beginning," division head Arne Hansson said. "We have now managed to agree on what the situation is and this had not been easy. It has taken almost 2 years."

In September the commission's working group will discuss possible measures at its annual conference.

The present report was written by a group in which Lars Thorell of the National Environment Protection Board was the Swedish representative. Various researchers from all member nations participated. Disunity among them was considerably greater than the disunity on the administrative level, Arne Hansson said.

In general, the report confirms the picture with which we are already familiar, albeit in vague generalities.

During the 20th century the oxygen content has dropped to about zero in large portions of the Baltic Sea's deep water. In addition, hydrosulfuric acid has spread, resulting in "wastelands" on the sea bed. The influx of fresh water through the Belts temporarily breathes new life into the depths, but the new animals that appear following slow colonization seem to be less viable.

The phosphate contents have increased by 100 to 300 percent in the deep water in the central Baltic Sea since the 1950's.

Each year 26,000 tons of phosphorus is put into the Baltic Sea by natural means or from industrial emissions.

Human Guilt

These changes are collected under the heading "natural and/or human causes." There is no doubt, however, that humans bear the blame for PCB and DDT emissions. The report mentions the all too familiar consequences--the poisoning of eagles and seals.

The report is more cautious, however, when it comes to otters and porpoises--species that have almost completely disappeared from the Baltic Sea: "It is possible that PCB is partly responsible for the decline in other mammal populations in the Baltic Sea, such as otters and porpoises."

It is also clear that the tripling of the zinc and lead and the tenfold increase in mercury and cadmimum content in the sediment cannot be blamed on natural phenomena.

It there anything positive to report?

The DDT contents in sediment and fish have decreased since that substance was banned in most Baltic Sea nations.

9336
CSO: 5000/2167

ACTU OCCUPATIONAL HEALTH BODY MAKING GOVERNMENT INROADS

Melbourne THE AGE in English 11 Aug 81 p 24

[Article by Michael Gordon]

[Excerpt] ALTHOUGH only three months old, the work of the ACTU/Trades Hall Council occupation health unit is beginning to be noticed by State and Federal Governments.

A union delegation to the State Government in the next two weeks will seek significant changes to draft legislation on safety, health and welfare which has already been hailed by the Government as a major reform.

Representatives of the unit have also appeared before the House of Representatives standing committee on environment and conservation and requested the setting up of a national occupational health and safety office to deal with hazardous chemicals.

The new State legislation is modelled on the British Health and Safety at Work Act which in 1974 laid primary responsibility on employers to provide a healthy and safe workplace.

The most important regulation from the UK act gave union safety representatives paid leave to undergo basic training, powers of inspection and rights to information.

According to the head of the ACTU/THC unit Dr John Mathews, this led to the appointment of more than 150,000 health and safety representatives (about one for every 300 workers) and "transformed the character of British industrial relations".

Says Mathews: "Gone is the emphasis by unions on seeking compensation for victims rather than preventing accidents in the first place. Gone is the propensity to accept unsafe and unhealthy working conditions by negotiating 'danger money' or 'dirt money'.

"Instead, this army of health and safety representatives has transformed the unions into permanent watchdogs ensuring that employers meet their responsibility for providing a healthy and safe workplace in full," he said.

While the Victorian legislation provides for consultation between employers and safety representatives, it does not stipulate that they be members of unions, that they can be appointed in all work places or spell out their rights.

Dr Mathews believes these rights should be detailed in the Act and include power to investigate potential hazards, complaints of employees, carry out regular inspections, receive information and have time off for training.

In a recent address, Dr Mathews said the union movement welcomed the Government's initiative but deplored the narrow scope of the draft legislation.

Dr Mathews outlined a number of other changes that would be sought from the State Government. He said that the THC would be consulting with the ALP to ensure that a bill meeting the council's requirements is introduced in the next Parliament if Labor wins the election.

In the submission to the House of Representatives standing committee inquiry into hazardous chemicals, the unit called for a 'sweeping, overall approach to the problem' through a national occupational health and safety office, which would assume powers to operate a fully comprehensive chemicals licensing scheme for all chemicals, including pesticides and food additives.

It would also:

- Draw up model health and safety regulations for implementation by the States (pending resolution of the constitutional difficulty that prevents the Commonwealth from operating its own health and safety inspectorate.
- Prepare policies to prevent what it called the scourge of occupational cancer, occupational sterility and birth defects, occupational heart disease and other long term problems.
- Frame policies to prevent chemical explosions, transport accidents and dumping and to co-ordinate the community's response when such disasters occur.

CSO: 5000/7586

EDITORIAL EXAMINES EPA POLLUTION CONTROL SYSTEM

Melbourne THE AGE in English 12 Aug 81 p 13

[Editorial: "Environment's Legal Fog"]

[Text]

THE Environment Protection Authority has tied itself in a nasty knot over control of the State's air emissions. Unable to police its own licences, it has introduced a system whereby those who discharge pollutants monitor themselves. It is a reasonable principle; and perhaps, given the EPA's woeful record on monitoring of air licences, the only way to build an overall picture of the hazardous industrial chemicals which are pumped continuously into the environment. Yet it has two glaring flaws. The first and most obvious is the potential for industry to fiddle its figures. The second is that when the figures do reveal a breach of licence conditions, the EPA can do virtually nothing about it. It cannot prosecute the offender because, under the Environment Protection Act 1970, the figures are self-incriminatory and so inadmissible in court. It cannot make public the information without the consent of the offender. Nor can it collect its own information, for by the time it discovers a breach has occurred, it has passed. All it can do is scold.

This is no way for a pollution watchdog to work. The point is not that clean air is aesthetically desirable — although it is that — but that contaminated air is a danger to public health. Many of the chemicals are poisons. Vinyl chloride monomer (VCM), for example, has been classified as "potentially carcinogenic, mutagenic, teratogenic (monster-producing), highly toxic or highly persistent"; as 'The Age' reported this week, accidents at one petrochemical complex in Altona have resulted in the unauthorised release of many tonnes of VCM. There have been at least 17 such accidents — what the company calls "excursions" — since 1977, yet the EPA has neither prosecuted the company (the self-incrimination rule), nor gathered its own evidence. Unfortunately, this is not an isolated case. The EPA manages each year to test roughly one air licence for every 100 in force; small wonder that the documents are described by critics as "licences to pollute".

The EPA alone cannot unravel the knot. Industry can co-operate--and, with a few familiar exceptions, it does-- but the system itself is at fault. The State Government has proved an unreliable ally in the past, yet it must be given the chance to show that it does, in fact, regard the EPA as substantially more than an enfeebled vestige of what was once a policy called the quality of life. More money and staff for monitoring activities is an immediate priority. In the longer term is the EPA's proposal to create a comprehensive grid of monitoring stations. These will provide independent data on air quality, and indicate the areas where contamination recurs. Amendment of the act's self-incrimination clause should be considered and debated. It is in the Government's interest to have an authority which appears to be doing its job effectively. It is in the community's interest that it should succeed.

CSO: 5000/7586

VICTORIA LAWYERS CALL FOR PUBLIC PROSECUTION OF POLLUTERS

Melbourne THE AGE in English 24 Aug 81 p 3

[Article by Andrew Bolt]

[Text] The Victorian Law Institute is pushing for changes to allow the public to prosecute polluters when the Environment Protection Authority is unwilling to act.

The institute also wants the State Government to set up an Environment Defenders Office to offer legal aid and advice to individuals who want to take polluters to court.

The secretary of the institute's environmental law section, Mr Kevin Zervos, said individual rights were necessary because the EPA was not an effective environmental watchdog.

Mr Zervos said industry was not taking environmental legislation seriously enough because of the EPA's unwillingness to take offenders to court.

He said the lack of money, facilities and manpower was hampering the authority, and the Government's "new direction" policy was discouraging it from taking the stick to companies allegedly breaching the law.

Because the EPA relied largely on company information and co-operation in monitoring and controlling pollution, it had been forced to act as a mediator rather than an enforcement agency, he said.

Mr Zervos said this was not necessarily bad, but it led to "internal conflict" within the authority when it needed to show its strength. As a result, there were cases where the EPA had failed to act effectively against an offending company, although it had performed well generally, given its constraints.

"But they are there as an enforcement agency and if the situation arises that a person or company needs to be prosecuted then so be it," Mr Zervos said.

He said that given the EPA's limits the answer was to give individuals the right to prosecute. Individuals currently can only prosecute when a nuisance directly affects or threatens them, and then only with the Attorney-General's consent.

Mr Zervos said the public should be able to act almost as the authority's delegated agencies. "If there is a wrong that needs to be righted then it is irrelevant who places the issue before the court for determination," he said.

He said critics of the proposal would argue that it would lead to the courts being flooded with "vexatious litigants" — people too ready to initiate litigation.

"I don't believe the vexatious litigant exists," Mr Zervos said. "But if there are one or two like that, why should the rest of the population be denied the right to go to court?

"I'm annoyed that as an ordinary member of the community I am denied the right to bring action against an individual or body that is afefcting my basic right to enjoyment of the invironment."

Mr Zervos said there was no concept in the law as it stood of a person's right to enjoy the environment. He supported the State Labor Party's call for an examination of the EPA and the way environmental legislation was enforced in Victoria.

The EPA needed more strength and more autonomy from Government interference and influence, Mr Zervos said. The EPA's defeat at the hands of the SEC over the Newport power station licence had shown the authority's vulnerability to State Government interference.

CSO: 5000/7586

AUSTRALIA

BRIEFS

INDUSTRIAL WASTE SURVEY--Only 400 of 1550 companies had bothered to respond to the biggest industrial liquid and solid-waste survey undertaken in WA, the Minister for Health, Mr Young, said in the weekend. The bigger companies co-operated, but smaller undertakings were not interested. "I am very disappointed," Mr Young said. "Of the 400 returns to the questionnaire sent out by the Public Health Department, about 100 were blank or did not contain any relevant information." "Some were just marked 'return to sender'." Mr Young said that the survey was undertaken in May for the WA waste disposal committee by his department, the Department of Conservation and Environment and the Metropolitan Water Board at a cost of about $10,000. "We have not received the back-up we asked for and expected," Mr Young said. "I cannot understand the companies' reluctance." "The information requested was to have been treated in the strictest confidence." "It would have been published in a form that protected such confidentiality." Mr Young said that the survey would have been invaluable in helping determine future policy on ways of protecting underground water supplies and would have helped industry cope with future problems in the most economical manner. The survey was based on a successful similar inquiry in New South Wales. "I can just assume that many companies don't want to tell us of any potentially poisonous wastes they handle and that they'd rather dispose of them at a tip without giving a damn about the future," Mr Young said. [Text] [Perth THE WEST AUSTRALIAN in English 10 Aug 81 p 27]

INSECT SPRAY DANGER--Insect sparys containing a chemical capable of damaging the human nervous system are being sold without adequate warnings, the Australian Consumers Association claimed yesterday. Medical studies had shown the ingredient, dichlorvos, to be highly toxic. If absorbed through the skin or inhaled in large enough doses, it interferes with the transmission of nerve impulses, the association said. Five of the most popular brands of surface insecticides (those usually sprayed about a home for their lethal residual effect on insects) contained dichlorvos, a substance under scrutiny as a possible carcinogen by the National Cancer Institute in the United States. The association said Swedish research had shown significant effects of the substance on the cell structure of plants and bacteria, suggesting it could cause mutations. The National Health and Medical Research Council in Canberra has recommended that plastic resin strips containing the chemical not used near food or children, but a spokesman said there were no significant dangers if users obeyed instructions. In Sydney, a Consumers Association spokesman said feeble or imprecise instructions on spray cans were a reason for concern. Yet medical experts said if the sprays were not used in moderate doses they posed a definite health risk. An association spokesman said geneticists in Australia believed that any chemical showing a mutagenic effect on bacteria, as in the Swedish tests, had a 90 per cent chance of causing cancer. [Text] [Canberra THE AUSTRALIAN in English 11 Aug 81 p 3] [Article by Peter Blunden]

MARINE PARK SPAT--The Queensland Government saw the future of the Great Barrier Reef as a few marine parks among oil rigs, the Federal Opposition environment spokesman, Mr Stewart West, said yesterday. He called on the Federal Environment Minister, Mr Wilson, to assert authority over the Queensland Government and declare the Cairns section of the Great Barrier Reef Marine Park. In an effort to overcome opposition from Queensland, the Federal Government set up a ministerial council, comprising two state and two federal ministers. A spokesman for Mr Wilson siad yesterday sensitive negotiations had been under way and it was hoped the council could meet as soon as possible. Mr West said yesterday the Commonwealth should overrule Queensland objections to adding the Cairns section to the Capricornia section, which had been declared. If Mr Wilson was not willing to do this, he should admit that his government had capitulated to the wishes of the Queensland Government," he said. "The Prime Minister, Mr Fraser, and Mr Wilson once again have been made fools of by the recalcitrant Queensland Government," Mr West said. "From time to time, Mr Wilson makes noises about getting tough over boundaries of the park and saying that the park should be declared in the not too distant future." "But, there is no hope of an imminent declaration under such an obviously timid and inconsistent federal minister as Mr Wilson." [Text] [Brisbane THE COURIER-MAIL in English 13 Aug 81 p 18]

ENVIRONMENTAL WATCHDOG GROUP--The Wran Government may live to regret its casting aside of departmental and professional advice on the proposed Parramatta Park football stadium. The manner in which the Government approved the stadium has drawn together five professional design bodies as a watchdog committee on the environment. This committee, comprising representatives of the Royal Australian Institute of Architects, Royal Australian Planning Institute, Royal Australian Institute of Parks and Recreation, Association of Consulting Engineers of Australia and the Australian Institute of Landscape Architects, will speak for about 8,000 architects, designers, engineers and planners. As the Joint Professions Standing Committee on the Environment, the body will scrutinise plans for projects which could affect the environment. It will speak out publicly and lobby the Government and politicians with its views on environmental issues. [Excerpt] [Sydney THE SYDNEY MORNING HERALD in English 17 Aug 81 p 10] [Article by Joseph Glascott]

ACTU HERBICIDE BAN--The ACTU executive voted yesterday to impose a national ban on the use of chemicals 2, 4-D and 2, 4, 5-T. The president of the ACTU, Mr Dolan, said a decision on how the ban would be implemented would be made by a meeting of affiliated unions to be held soon. He said the ban would not cover use of the chemicals in certain forest areas "or areas where there can be no immediate contact for the general public". [Text] [Melbourne THE AGE in English 19 Aug 81 p 4]

DESTRUCTION OF FISHING GROUNDS--Moreton Bay fish, crab and prawn breeding grounds would be harmed by reclamation work for Brisbane's new international airport, Queensland Amateur Fishing Council chairman, Dr Terry Russell, said yesterday. Grounds at Cribb Island and the Middle Banks would be destroyed, he said. Sand was being dredged from the Middle Banks and dumped on mangroves and mud-flats on Cribb Island to allow runway extensions. Dr Russell was responding to a statement by MLA Mr Ben Humphreys (ALP, Griffith) calling on fishermen to give evidence to the parliamentary works committee in Canberra on the adverse effects of the reclamation work. Mr Humphreys said: "Surely it must be obvious to the Transport Department that you just can't pump 13 million cubic metres of sand from Moreton Bay without its having a harmful effect on the bay or the in-shore environment. "I understand the fishermen are most alarmed at what's going on and they are calling for new fishing grounds to be opened up." Dr Russell said the reclamation work constituted the irreversible destruction of valuable fishing grounds. "These are nursery areas for mullet, flathead, bream, prawns and crabs," he said. "It is too late to reverse the loss of these grounds." Dr Russell said it would be impossible to open up new fishing areas because habitat destruction was not reversible or could not be compensated. "I don't think enough fishermen realise the gravity of the situation," Dr Russell said. [Excerpts] [Brisbane THE COURIER-MAIL in English 24 Aug 81 p 3]

CSO: 5000/7587

BRIEFS

AIR POLLUTION ACT--New Delhi, Aug. 24--The Air (Prevention and Control of Pollution) Act, 1981, which was passed unanimously by both Houses of Parliament in March last, has come into force throughout the country with retrospective effect from May 16. It will cover 20 industries which will be required to comply with the provisions of the Act. The earlier Central Water (Prevention and Control of Pollution) Act, 1974, is applicable only to States which have adopted it. A few States, including Tamil Nadu, Orissa, Mizoram and Nagaland, have not yet adopted this Act. The industries, covered by the present Act are: Asbestos and asbestos products; cement and cement products; chemical and allied products; coal and lignite-based chemical products; engineering; ferrous metallurgical; fertilizer; foundries; food and agricultural products; mining; non-ferrous metallurgical; ores/minerals/processing, including beneficiation and pelletisation; power (coal, petroleum and their products) generating plants and boiler plants; paper and pulp (including paper products); textile processing (made wholly or in part of cotton); petroleum refineries; petroleum products and petrochemical industries; plants for recovery from the disposal of wastes; and incinerators. Water Pollution Control Boards at the Centre and in the States are entrusted with the responsibility of air pollution control also to ensure the coordinated control of environmental pollution. In the case of States, which have not adopted the Central Water Pollution Control Act, only Air Pollution Control Boards will be formed. Pollution by ships and aircraft is not covered by this Act. Provision has been made for imprisonment for three months or fine up to Rs. 10,000 or both for failure to comply with the provisions of the Act. [Text] [Madras THE HINDU in English 25 Aug 81 p 7]

NORTHEAST SOIL EROSION--Shillong, August 23: With the establishment of a research complex of the Indian Council of Agricultural Research in the north-east region, agricultural engineering has received a considerable boost. One important conclusion reached after studies on soil erosion is that farming systems and other human activities, such as shifting cultivation (jhumming), cultivation on steep slopes using contour bunds, and road construction and urbanisation in the region have resulted in extensive soil loss and depletion of resources. It is stated that the "prevalence of shifting cultivation appears to be the single largest factor responsible for the degradation of land and water resources in the region." Preliminary estimates indicate that nearly 19 million tonnes of soil are lost annually as a result of shifting cultivation. The slow process of degradation has begun to show its effect and many areas, which were once covered by dense forests, now look barren. [Text] [Bombay THE TIMES OF INDIA in English 24 Aug 81 p 7]

CSO: 5000/7066

MARINE POLLUTION, FOREST DENUDATION POSE SERIOUS PROBLEMS

Kuala Lumpur BUSINESS TIMES in English 3 Jul 81 p 6

[Text] JAKARTA Bay, from which this teeming city of six million people obtains 85 per cent of its fish, may be dangerously polluted by heavy metals, according to experts.

They fear that mercury poisoning may already be taking a deadly toll in a huge bay whose pollution from industrial wastes is believed to be above normal international safety standards.

Last year, 13 children died in a fishing village of North Jakarta — their deaths blamed by local inhabitants on food contaminated by the bay's waters.

When President Suharto marked World Environment Day earlier this month he warned that Indonesia must take action to avoid repeating the mistakes of the industrialised world which had been forced to spend large sums to clean up pollution.

An Indonesian anti-pollution pioneer, Dr Meizar B. Syafei, has long complained about mercury pollution in the bay area.

Water samples from a river which dumped its water into the bay had shown a reading 62 times higher than the international safety level for mercury pollution, he said.

Samples of freshwater wells and fishponds in the waterfront fishing village where the children died have also high mercury pollution readings, according to the weekly news magazine, *Tempo*.

Industrial waste from chemical factories located along the main rivers that flow into the bay produce most of the pollutants — mercury, cadmium and zinc.

Legislation is now being drafted to force the factories to ensure that the wastes they dump into the rivers are free from pollutants.

Despite President Suharto's call for more stringent pollution control, an Industry Ministry official said such measures will only increase the price of the products. "This is one of the reasons why we cannot not be so rigid in imposing the regulations," he said.

But Indonesia also faces other major environmental hazards.

Large-scale and often haphazard logging operations in crowded Java and the other islands are now being blamed as a prime cause for floods and landslides.

A Social Ministry spokesman reported that about 1,000 Indonesians die each year as a result of floods, landslides, eruptions and earthquakes. Another 2.5 million suffer from the disasters and an estimated 100,000 houses are annually destroyed or damaged.

In East Java alone, more than 350 people died last month in a landslide when tons of mud and cooled lava slid down the mountainside.

Land erosion is reaching huge proportions in Java where more than 61 per cent of Indonesia's 147 million population live.

Forestry Department officials said the expansion of towns and the rapid population growth had drastically cut forest areas needed to retain water in the rainy season.

According to official statistics, 23 per cent of the island of Java was covered by forests in the early 60s. This area has now dwindled to less than 15 per cent.

Logging and mining operations in Central Sumatra have created another kind of environmental problem.

Tigers and elephants went on a rampage last year and early this year. At least 50 people were reported killed and attacked by the marauding tigers, apparently deprived of their natural prey because of the encroachment of settlements into their jungle lairs.

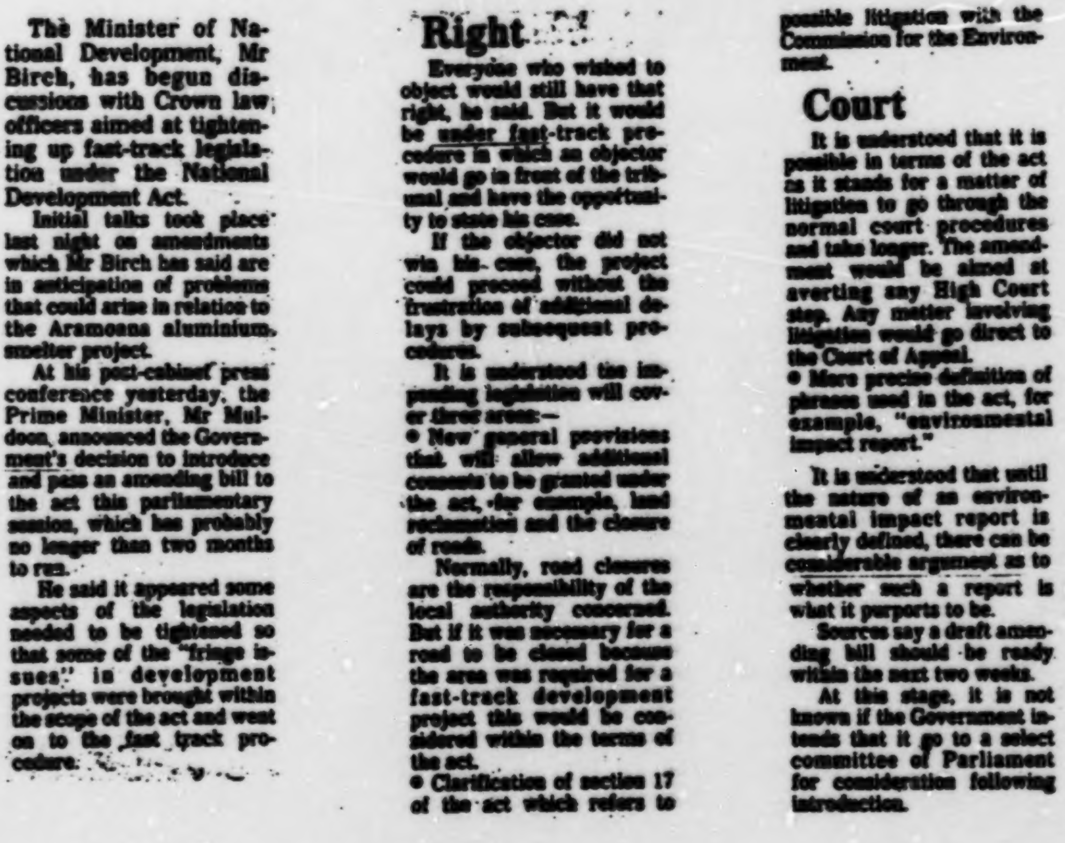
Hordes of elephants destroyed several villages in Central Sumatra in the last few years when their natural habitat was reduced by logging operations. — Reuter

CSO: 5000/8023

GOVERNMENT TO TIGHTEN UP FAST-TRACK DEVELOPMENT LAW

Wellington EVENING POST in English 18 Aug 81 p 4

[Text]



The Minister of National Development, Mr Birch, has begun discussions with Crown law officers aimed at tightening up fast-track legislation under the National Development Act.

Initial talks took place last night on amendments which Mr Birch has said are in anticipation of problems that could arise in relation to the Aramoana aluminium smelter project.

At his post-cabinet press conference yesterday, the Prime Minister, Mr Muldoon, announced the Government's decision to introduce and pass an amending bill to the act this parliamentary session, which has probably no longer than two months to run.

He said it appeared some aspects of the legislation needed to be tightened so that some of the "fringe issues" in development projects were brought within the scope of the act and went on to the fast track procedure.

Right

Everyone who wished to object would still have that right, he said. But it would be under fast-track procedure in which an objector would go in front of the tribunal and have the opportunity to state his case.

If the objector did not win his case, the project could proceed without the frustration of additional delays by subsequent procedures.

It is understood the impending legislation will cover three areas:—

- New general provisions that will allow additional consents to be granted under the act, for example, land reclamation and the closure of roads.

Normally, road closures are the responsibility of the local authority concerned. But if it was necessary for a road to be closed because the area was required for a fast-track development project this would be considered within the terms of the act.

- Clarification of section 17 of the act which refers to possible litigation with the Commission for the Environment.

Court

It is understood that it is possible in terms of the act as it stands for a matter of litigation to go through the normal court procedures and take longer. The amendment would be aimed at averting any High Court step. Any matter involving litigation would go direct to the Court of Appeal.

- More precise definition of phrases used in the act, for example, "environmental impact report."

It is understood that until the nature of an environmental impact report is clearly defined, there can be considerable argument as to whether such a report is what it purports to be.

Sources say a draft amending bill should be ready within the next two weeks.

At this stage, it is not known if the Government intends that it go to a select committee of Parliament for consideration following introduction.

CSO: 5000/9043

INTERNATIONAL PLAN TO CONTROL DANGEROUS CHEMICALS BACKED

Wellington EVENING POST in English 1 Sep 81 p 16

[Text] The scheme has been adopted by the Organisation for Economic Co-operation and Development, but has run into opposition from United States chemical manufacturers.

Mr Robinson, an assistant deputy minister of the environment in Ottawa, wants chemical-buying countries like Australia, New Zealand and Canada to back a mandatory testing programme for all new chemicals.

"For some years now we have had in place the most advanced industrial countries environmental and health tests for pesticides, pharmaceuticals and food additives," he said.

"These are most sophisticated in the case of pesticides. You would have to spend $US5 million and dispose of 1000 rats to bring a pesticide into the market, but there are about 50,000 industrial chemicals in use that don't fall under any programme, and there are 1000 new ones every year.

"Pesticides are what scientists call biologically active — that's jargon to mean they kill things — -and phamaceuticals and food additives are ingested.

"Nobody argues that we should focus on them, after all we don't want any more thalidomides, but is it appropriate to ignore the other 1000?" he asked.

Four years ago the OECD adopted its programme with standard test guidelines and laboratory practices that could be checked by visitors from other countries, but the United States is still blocking the mandatory plan because its companies developing the new chemicals have philosophical objections to being forced to follow the guidelines.

'Passport'

The other countries may agree to the United States opting out over chemicals for internal use, but still hope that chemicals for export will carry the "chemical passport" of complete tests.

Mr Robinson will meet the Minister of Health, Mr Gair, and the Minister for the Environment, Dr Shearer, as well as the commissioner for the environment, Mr Ken Piddington and other senior officials to put his case this week.

Before joining the federal Department for the Environment in Ottawa, Mr Robinson was a foreign service officer, his last post being deputy high commissioner in Wellington. After his official calls he will spend the rest of his four weeks in New Zealand looking up old friends from 11 years ago.

He has also had some experience of the Agent Orange problem, since that Vietnam war herbicide was manufactured on the US-Canada border, and he suspects there was a major leak into the Great Lakes in the early 70s.

Classified as a pesticide, Agent Orange was subject to tests in the 60s when it came on to the market. "I guess it would probably not be registered today, when any suspicion of dioxin is banned in pesticide," he commented.

CSO: 5000/9044

WILDWATER PROTECTION BILL INTRODUCED IN PARLIAMENT

Wellington EVENING POST in English 2 Sep 81 p 5

[Text]

The Water and Soil Conservation Bill, in the hands of the Minister of Works, Mr Bill Young, was not opposed by the Opposition. It will now go to the parliamentary lands and agriculture select committee for submissions and consideration.

The bill, the minister said, had two major objectives: first, the protection of rivers and lakes, where possible in their natural state; and second, to ensure that natural water heated by geothermal energy was covered by the principal act.

Referring to the second aim, Mr Young said clauses in the bill would ensure that the taking of geothermal waters was subject to obtaining a water right. This was important in areas of scenic and tourist value.

"Unrestricted and increasing draw-off of geothermal water by bores may ultimately reduce surface geothermal activity to such an extent that the scenic and tourist features may be severely impaired or destroyed," said the minister. Insisting on a water right ensured public participation.

Other clauses set out procedures for identifying and preserving in their natural state those rivers, streams and lakes which had wild, scenic or other outstanding natural characteristics.

A two-tier system, Mr Young said, was proposed as between nationally and locally important rivers and lakes. For nationally important rivers and lakes, a national water conservation order was proposed.

It would be an order-in-council made after consideration by the national water and soil conservation authority and an inquiry by the planning tribunal.

For locally important waterways, he said, a local water conservation notice was proposed. These would be prepared by the appropriate regional water board and were subject to appeal to the planning tribunal.

The interests of existing holders of water rights were preserved under the bill.

A national survey, said Mr Young, was nearing completion to establish recreational and other features of rivers and lakes.

It was proposed that the bill came into force on April 1 next year, enabling the survey to be further advanced so the results could be used in evaluating and considering applications under the legislation.

"The Government, in respect of national significant rivers and lakes, and regional water authorities in respect of locally important waterways, will be able to strike a balance between those interests of the passive user and the interests of the out-of-stream users, seeking rights to take or divert, or dam the water resource," he said.

'Lipstick'

The Labour spokesman on the environment, Mr Mike Moore, said this type of law should be introduced by the minister for the environment, not the minister of works.

He described the bill as "a little bit of liberal lipstick to tart up the Government's growth strategies."

It appeared that only those special groups named in the bill could make application to have a river or lake so protected. What about other environmental groups, he asked.

It seemed the minister had the final say in determining a river or lakes protection.

The Government MP for Marlborough, Mr Doug Kidd, said he believed the bill would be welcomed. Previous law had not been strong enough, and this strengthened the environmental emphasis.

Attention

The bill also provided for full public participation. It was important to pay proper attention to conservation and to make a bold statement on its behalf in a time of development and growth.

The Labour spokesman on works, Mr Mick Connolly, asked what consultations the minister had held with interest groups on the bill.

Replying, the minister said wide consultations had been held, including with the federated mountain clubs, the save-the-rivers campaign and the environmental defence society.

A wide range of people had the chance to make applications for waterway protection.

If a minister disagreed with a planning tribunal recommendation on protection, he had to report to Parliament within 28 days stating his reasons, he said.

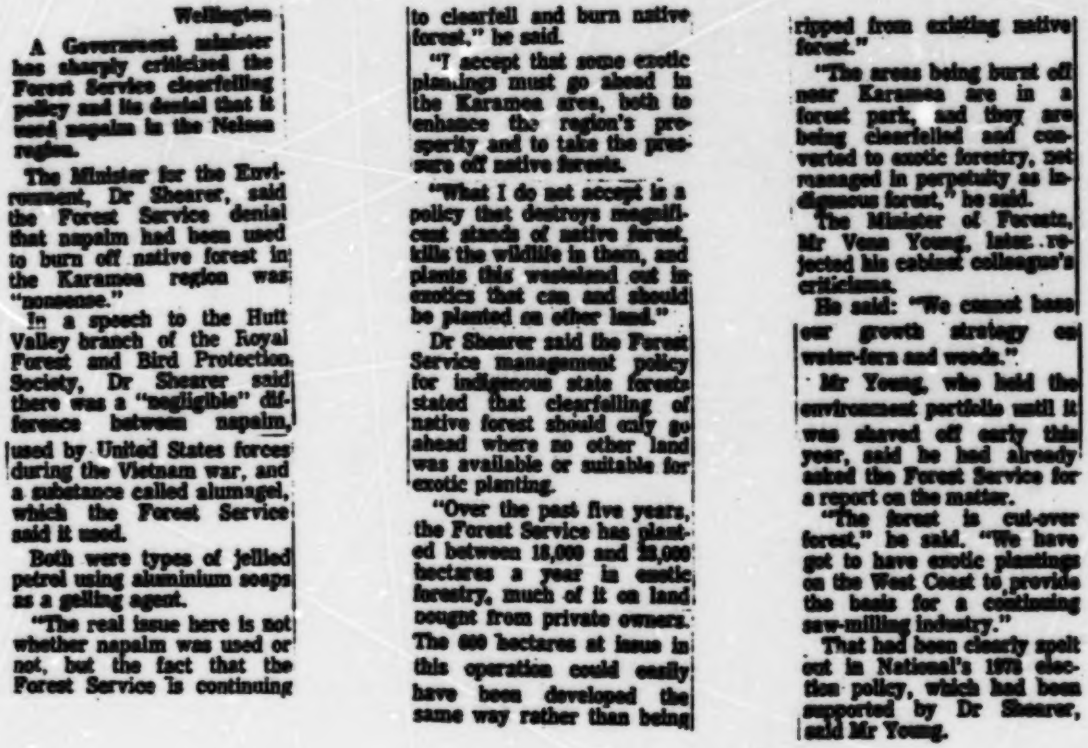
CSO: 5000/9045

FOREST PROTECTION, EXPLOITATION REMAIN DIVISIVE ISSUES

Environment Minister's Criticism

Auckland NZ HERALD in English 7 Aug 81 p 1

[Text]



Wellington

A Government minister has sharply criticised the Forest Service clearfelling policy and its denial that it used napalm in the Nelson region.

The Minister for the Environment, Dr Shearer, said the Forest Service denial that napalm had been used to burn off native forest in the Karamea region was "nonsense."

In a speech to the Hutt Valley branch of the Royal Forest and Bird Protection Society, Dr Shearer said there was a "negligible" difference between napalm, used by United States forces during the Vietnam war, and a substance called alumagel, which the Forest Service said it used.

Both were types of jellied petrol using aluminium soaps as a gelling agent.

"The real issue here is not whether napalm was used or not, but the fact that the Forest Service is continuing to clearfell and burn native forest," he said.

"I accept that some exotic plantings must go ahead in the Karamea area, both to enhance the region's prosperity and to take the pressure off native forests.

"What I do not accept is a policy that destroys magnificent stands of native forest, kills the wildlife in them, and plants this wasteland out in exotics that can and should be planted on other land."

Dr Shearer said the Forest Service management policy for indigenous state forests stated that clearfelling of native forest should only go ahead where no other land was available or suitable for exotic planting.

"Over the past five years, the Forest Service has planted between 18,000 and 23,000 hectares a year in exotic forestry, much of it on land bought from private owners. The 600 hectares at issue in this operation could easily have been developed the same way rather than being ripped from existing native forest."

"The areas being burnt off near Karamea are in a forest park, and they are being clearfelled and converted to exotic forestry, not managed in perpetuity as indigenous forest," he said.

The Minister of Forests, Mr Venn Young, later rejected his cabinet colleague's criticisms.

He said: "We cannot base our growth strategy on water-fern and weeds."

Mr Young, who held the environment portfolio until it was shaved off early this year, said he had already asked the Forest Service for a report on the matter.

"The forest is cut-over forest," he said. "We have got to have exotic plantings on the West Coast to provide the basis for a continuing saw-milling industry."

That had been clearly spelt out in National's 1978 election policy, which had been supported by Dr Shearer, said Mr Young.

Forest Service Defends Burning

Christchurch PRESS in English 11 Aug 81 p 2

[Text]

Parliamentary reporter

It is unlikely that more than 15 to 20 millable trees were destroyed in a burn-off of State native forest near Karamea, according to the Director-General of Forests, Mr G. M. O'Neill, in a letter to the Minister of Forests, Mr V. S. Young.

Mr Young yesterday made public the letter, which sets out and answers points at issue regarding the burn-off, in which jellied petrol was used.

Critics have questioned the use of jellied petrol and its effect on native birds, the waste of millable timber, and whether the burn-off was in accordance with publicly approved forest policy.

In the letter Mr O'Neill said that no more than 20 millable trees spread over 60ha would have been destroyed in the burn-off to clear land for exotic planting. To the layman it would have appeared that some of the species burned off, such as kamahi, rata, small beech trees, and unsound podocarp logs, were useable timber, but they were not.

Timber previously sold under milling contracts from the site had been millable podocarps, red and silver beech, and logs of veneer quality.

The area which had been burned had been logged before 1978. A scattering of small podocarp seed trees had been planted after the logging to encourage natural regeneration. These, and all standing scrub, had been cleared to make way for exotic tree species. The seed trees would have been uneconomic to recover for milling at that time.

Of the use of Alumagel, the burning agent, Mr O'Neill said it was unfortunate that it had become confused with napalm, which had emotive and military connotations because of its use in Vietnam. The two agents were not the same but had similar preparations.

Alumagel had been used for years because it had "added greatly to safety."

Animal life had not been endangered because the fire had been lit and managed in a zig-zag pattern from bottom to top, allowing animals and birds to escape. A "ring" burn would have trapped them.

Wildlife Service officers were convinced that there had been no kiwis in the burn area. The kiwis' preferred habitat was lower in the valley.

Of the Forest Service's compliance with publicly approved forest management policy, Mr O'Neill said that under this policy conversion of State native forests to exotics was possible only in special circumstances. The West Coast met these circumstances, which allowed the conversion of forest to meet regional afforestation goals when other land was unavailable.

The Forest Service had tried to find cleared or scrub-covered land that was suitable in the Karamea area but had not found any. The planting of cleared land suitable for dairying was not considered in the regional interest because of the growth of the local farming industry.

Small areas of open land existed within State forest in the region but these totalled less than 100ha and were in small scattered blocks. Road access would have to be provided and the areas would have to be drained.

The special circumstances had been emphasised in the Government's West Coast forest policy, of 1978, in which it had been agreed that the levels of exotic planting in the area would be determined by the need to sustain a minimum level of cut to sawmills.

Further opportunity for public scrutiny of proposals had been given in the "North-west Nelson State Forest Park Management Review." The review was a precursor to the preparation of a new management plan for the forest park.

In the review the principal objectives for Karamea were to plant out a minimum area of 370ha to sustain an annual cut of 7000 cu m in the Karamea "working circle" and to plant species and adopt silvicultural systems producing wood of high quality and value.

The review had said that areas of manuka and gorse hill country or pakihi not suitable for agriculture were limited and that much of the land for exotic planting would have to be "old cut-over exhibiting little regeneration or future logging areas where low numbers of regeneration of timber species are available prior to logging."

Copies of the review had been sent to many organisations, including the Native Forests Action Council. The council had not made any submission on the review to the Conservator of Forests.

New Protection Campaign Launched

Wellington EVENING POST in English 10 Aug 81 p 5

[Text]

By inviting concerned members of the public to "buy shares" in New Zealand's native forests at $2 each, three leading conservation organisations hope to raise $30,000 for a big pre-election publicity campaign.

The Minister for the Environment, Dr Ian Shearer, spoke at the launching of the venture, to save native forests, in Wellington this afternoon.

Organising the fundraising are the Royal Forest and Bird Protection Society, the Native Forests Action Council and the Federated Mountain Clubs.

A campaign spokesman said raising this amount of money was necessary for the crucial period leading up to the general election.

Campaign director Mr Guy Salmon said the printed share certificates, designed by Wellington artist Mr Roy Cowan, would remind people that they were the true owners of the state forests.

'Bombing'

"The news of napalm bombing operations being carried out in publicly-owned native forests has shocked the country.

"New Zealanders have had enough of the ruthless exploitation of our native forests. There has got to be a cry of anger, loud and clear".

By the time of the general election in November, the campaign aimed to have commitments from all three political parties to add Waikukupa and South Okari forests to Westland National Park; create a Paparoa National Park near Punakaiki in North Westland; and to legally protect the remaining fragments of virgin state forest in the North Island, he said.

Replying to a parliamentary question last week on behalf of the Minister of Forests, the Associate Minister of Finance, Mr Cooper, confirmed that it was common practice to use a form of jellied petrol to burn off forest as helicopters could be used and there was a greater degree of human safety and control involved. Careful checks were made to ensure that all millable timber was saved and where practicable a recovery operation was carried out to rescue flightless birds in the area.

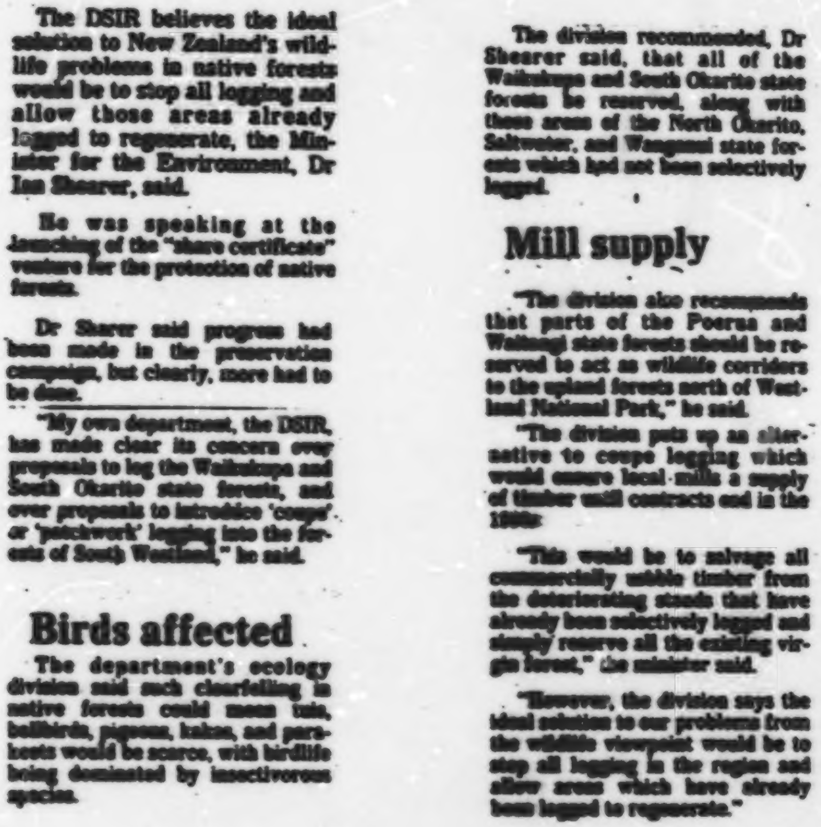
The simple fact of the matter, he said, was that this type of operation had been going on in New Zealand for about 15 years.

"They are trying to clear some forest to plant some trees, to give some employment to people on the west coast."

Native Forest Logging Ban Urged

Wellington EVENING POST in English 11 Aug 81 p 11

[Text]



The DSIR believes the ideal solution to New Zealand's wildlife problems in native forests would be to stop all logging and allow those areas already logged to regenerate, the Minister for the Environment, Dr Ian Shearer, said.

He was speaking at the launching of the "share certificate" venture for the protection of native forests.

Dr Sharer said progress had been made in the preservation campaign, but clearly, more had to be done.

"My own department, the DSIR, has made clear its concern over proposals to log the Waikukupa and South Okarito state forests, and over proposals to introduce 'coupe' or 'patchwork' logging into the forests of South Westland," he said.

Birds affected

The department's ecology division said such clearfelling in native forests could mean tuis, bellbirds, pigeons, kakas, and parakeets would be scarce, with birdlife being dominated by insectivorous species.

The division recommended, Dr Shearer said, that all of the Waikukupa and South Okarito state forests be reserved, along with those areas of the North Okarito, Saltwater, and Wanganui state forests which had not been selectively logged.

Mill supply

"The division also recommends that parts of the Poerua and Waitangi state forests should be reserved to act as wildlife corridors to the upland forests north of Westland National Park," he said.

"The division puts up an alternative to coupe logging which would ensure local mills a supply of timber until contracts end in the 1980s.

"This would be to salvage all commercially usable timber from the deteriorating stands that have already been selectively logged and simply reserve all the existing virgin forest," the minister said.

"However, the division says the ideal solution to our problems from the wildlife viewpoint would be to stop all logging in the region and allow areas which have already been logged to regenerate."

Labor Party Policy Released

Wellington EVENING POST in English 14 Aug 81 p 10

[Text]

The Labour Party's policy on native forests, released last night, draws a distinction between milling in the North and South Islands, and promises state support for workers and investors hit by environmental plans.

The Opposition's shadow minister of the environment, Mr Mike Moore, told a meeting here that it is critical to retain the remnant of virgin state forest in the North Island.

But on the west coast the sawmilling industry must be sustained at a level "which contributes significantly to the regional economy," Mr Moore said.

He gave an assurance that people in areas directly affected by environmental policy would not have to carry the full financial cost.

"If it is in the New Zealand interest to create new national parks or extend existing ones then it must be a charge and a cost upon the New Zealand taxpayer, not a cost upon the bloke with a house, a mortgage and no hope of another job."

Rural communities depending on sawmilling had to be protected. If forests were to be saved in the New Zealand interest, "then all New Zealanders must be prepared to protect the employees and investors involved."

Labour would use the state's available radiata pine resources "where this may be needed to protect sawmill employment and will guarantee the future of the workforce involved."

South Island logging should be reduced by a careful programme tailored to replacement levels, he added.

In the North Island the commercial logging of virgin indigenous state forest would be phased out within the first three-year term of a Labour government.

"Legal protection will be extended to the remaining areas of virgin forest."

The Labour policy for the West Coast offers support for the use of beech forests, "based largely on renewal."

Labour would also "plant sufficient fast-growing trees to sustain and expand the timber industry in the future."

The National Parks and Reserves Authority would be invited to give urgent consideration to any propositions for new or extended national parks and reserves.

If the authority came up with recommendations a Labour government would call for studies to identify the social and economic impact on the community and resources.

It would also seek submissions from groups and the public on the proposal.

Mr Moore said Labour would recognise the protection of native forests as a matter of national importance under the Town and Country Planning Act, and provide under the act for a zoning system for permanent private open space.

Land so protected would remain in private tenure and would, with the agreement of the local authority, qualify for remission of rates.

Labour would also ensure that environmental considerations were taken into account regarding private indigenous forests when farm development loans were granted.

Mr Moore also said his party would give the Commission for the Environment "integrity and independence by legislation."

The aim was to make the commission like the United States Environmental Protection Agency, "highly mobile, effective and hard-hitting."

The commission, not the cabinet, would decide when impact reports were needed.

"They could widen their considerations to economic and social impact."

Party Protection Policies Differ

Christchurch PRESS in English 15 Aug 81 p 21

[Text]

Conservationists in Christchurch did not get the promises they hoped for on the preservation of West Coast native forests, when representatives of the three main political parties attended a meeting of the Native Forest Action Council on Thursday evening.

They spoke on what their parties would do as a government to protect native forest.

The representatives were the Opposition Shadow Minister for the Environment, Mr M. K. Moore; National's Selwyn candidate, Ms Ruth Richardson; and Social Credit's spokesman on education Mr Richard Bach, who spoke for Mrs Pat Wojcik, the spokeswoman on environment, forests, and energy.

At the end of the two hours and a half meeting at the Repertory Theatre, the council's research director, Mr Guy Salmon, awarded Social Credit a B for its pledge to protect the Paparoa Range. He said that none of the parties, however, was willing to offer anything on saving the South Okarito and Waikukupa areas.

The council realised the importance of preventing the loss of jobs. Much land not bearing native forest was suitable for agriculture, said Mr Salmon, but only a proportion of this was being farmed, and future sales of decorative timber did not depend on logging in the three areas.

Mr Moore said that the Labour Party would create a Paparoa national park but would not do this until an assurance could be given to people working in the area that jobs would be available elsewhere. He believed that assurance could be given if Labour became the government.

He said that the available radiata pine forest would be used where needed to guarantee the future of the workers involved.

The logging of North Island native forest would be phased out within the first three years of a Labour Government. In the South Island, the National Parks and Reserves Authority would be asked to give urgent consideration to any propositions for new or extended national parks and reserves, said Mr Moore.

Mr Bach said that if Social Credit became the Government an immediate, permanent ban would be placed on logging in the forest of Maruia, Paparoa, and Ohinetamatea. A 10-year moratorium would be put on logging in South Okarito and Waikukupa, to be succeeded by permanent protection, if ample jobs had been secured in South Westland in the meantime.

Mrs Wojcik's vision of a self-sustaining New Zealand included diversification of West Coast industries.

This included further employment in petrochemical manufacture based on Westport coal supplies, sustained yield management of beech in Inangahua and Grey to support sawmilling, furniture manufacture, woodchips and ethanol at Reefton, and an expanded fishing industry, including deep-sea fishing and shore processing at Greymouth. In the Hokitika-Ruatapu farming and exotic forestry would be expanded for both sawmilling and further processing, said Mr Bach.

In the meantime, timber supplies would come from North Westland, and would include beech. The timber from South Westland would be used for furniture, joinery, and veneer in that region, he said.

A telegram from the Values Party was read to the meeting. It said that the party would stop all logging of native forests, and that it fully supported the council.

Conservationists' Criticism Rebutted

Auckland NZ HERALD in English 17 Aug 81 p 5

[Text]

The survival of Karamea is entirely dependent on continued logging of native forests in the north-west Nelson Forest Park, says the Forest Service.

Replying to criticism from conservationists of the service's clearing and burning of native forest in the park, the assistant director of forest management, Mr Murray Hosking, said Karamea would die without its sawmill.

All the timber for the sawmill comes from the western side of the park, a cut of 7500 cubic metres a year.

Mr Hosking dismissed as "a cheap publicity stunt" the roast kiwi stand set up outside the Forest Service's Wellington office last week to protest at the burning of forest near Karamea.

The burning, using alumagel, was part of a plan to convert 600 hectares of cut-over native forest to exotic forest over the next 25 to 30 years, he said.

Frightened Off

The eventual aim was to grow enough exotic timber — mostly pine — to sustain the sawmill without logging native forest.

Mr Hosking said the burning technique, preceded by clearfelling of the forest, minimised the chances of birds being burned. Most birds would leave the area during the felling or be frightened off by the helicopter used to drop the burning alumagel.

The burnt area was not good kiwi habitat anyway, he said.

The Native Forests Action Council, however, has accused the service of "suppressing and ignoring" a report by the wildlife service recommending against the burning.

Other Concerns

Mr Hosking denied the Forest Service had suppressed the report. It was one of 40 submissions to the service on the management of the park which were and had been available to the public, he said.

The report had been considered with the other submissions, but other concerns — most importantly the survival of the sawmill — had outweighed the potential threat to wildlife.

Mr Hosking rejected claims by the action council that other areas in the park of less value to wildlife could be used for exotic planting.

The 600 hectares in the Oparara Valley was the only area available other than 80 hectares which were "remote and inaccessible."

Scrubland in the park was needed as pasture for the local dairy industry, he said.

Regenerating

He agreed that lowland forest — such as the burned area — was the best forest for wildlife, but said that upland forest could not be converted for exotic planting as it was needed to stabilise soil.

The 600 hectares had been chosen because the forest there was not regenerating as well as other forest in the park.

The service intended to keep 30,000 hectares of virgin forest in the park untouched, he said.

Protect Wildlife

The president of the action council, Miss Gwenny Davis, called on the service to stop conversion from native to exotic forest until draft management plans for the park had been released by the service and the public had had the chance to make submissions.

Only then, she said, could a compromise be reached that would sustain the sawmill and effectively protect wildlife and lowland native forest.

Mr Hosking said he hoped the draft management plans would be completed by the service by the end of the year.

CSO: 5000/9042

LABOR PARTY CONDEMNS PROPOSED DEVELOPMENT ACT AMENDMENTS

Wellington EVENING POST in English 1 Sep 81 p 32

[Text]

In a joint statement, the Labour shadow minister for the environment, Mr Mike Moore, and shadow minister for constitutional affairs, Mr Geoffrey Palmer, said the defects of the legislation were well advertised by the Labour Party when the original legislation was introduced.

"The legislation was conceived in haste, and its defects are fundamental. Labour will never use the fast-track legislation and will repeal it at an early opportunity," they said.

The Government appeared to have reached "the advanced stages of paranoia" about the possibilities of courts holding up developments.

"A government which has spoken so much lately of law and order ought not to try to oust the courts from their proper constitutional role. Yet that appears to be the purpose of the proposed amendments."

What the Government had failed to appreciate, despite many warnings, was that the act itself created difficulties and ambiguities.

The two shadow ministers said that at the time the National Development Act was passed, the Government said it was going to review all planning procedures so that they were less cumbersome.

Not done

"That review has not been done. The result is that for small projects which provide most of New Zealand's employment opportunities, the defects of planning procedures remain."

They said a Labour government would initiate a comprehensive review and consolidation of all planning and environmental legislation impinging upon development.

"We will make it easier for applications under the Town and Country Planning Act, the Water and Soil Conservation Act, and the Clean Air Act to be considered at one hearing.

"If all parties agree, the initial hearing before the local authority will be dispensed with, leaving all matters to be heard by the Planning Tribunal."

Under Labour, in cases of national importance, the Town and Country Planning Act would be amended to provide that the Minister of National Development might advise the Planning Tribunal that a particular issue was of national importance and that the tribunal should accordingly deal with it as a matter of priority.

Overriding

However, there would be no provision allowing the government to override the tribunal's decision or limiting appeal to the courts as at present.

Messrs Moore and Palmer said the Labour Party rejected the present Government's response to the inadequacy of present planning procedures in the form of the National Development Act.

It believed that whether or not a planned development represented the best use of New Zealand's resources, it should be a matter capable of debate at Planning Tribunal hearings.

They said that among the proposed changes mooted by the Government, the definition of "environmental impact report" was particularly important.

The Opposition had moved an amendment to define the term when the act was originally passed, but the Government had voted it down.

"It is important that the definition be wide enough to look at the full impact including the social consequences of the development. We suspect the Government finds the Commission for the Environment a nuisance and wants to downgrade its role."

CSO: 5000/9044

HEARINGS CONTINUE ON PROPOSED AMENDMENTS TO MINING ACT

Fishing Industry Board Views

Auckland NEW ZEALAND HERALD in English 27 Aug 81 p 10

[Excerpt] The Fishing Industry Board has called on the Government to include all mining activities under the ambit of one piece of legislation.

In submissions today to the commerce and mining committee examining the Mining Amendment Bill, the board said that while above-ground mining was covered by the bill, seabed mining was covered by the Continental Shelf Act.

"It would be preferred if legislation covering all mining activities whether on land or seabed be included in one act, with consistent procedures and practice being followed in the administration of mining land-uses wherever they occur," the board said.

The fishing body welcomed the establishment of a planning tribunal as the final arbiter in mining licence matters and the inclusion of extra safeguards to prevent damage to areas of fishing.

But it told the committee the rights given to holders of prospecting licences should be drawn more tightly.

The rights had been extended to include the erection of buildings, the construction and use of plant, machinery and tracks.

"This fishing industry is not concerned about low-impact, small-scale prospecting activities but more concerned with prospecting licences allowing such practices as extensive bulk sampling, the use of heavy machinery and extensive site excavation, particularly where these activities were near coastal waters," the board said.

The submissions also sought changes to sections of the bill requiring advertising of applications for licences.

The advertisements should contain sufficient information to enable concerned parties to object, it said, by giving a brief summary of the type of mining operation proposed and its location.

Farmers Federation Concerns

Christchurch PRESS in English 28 Aug 81 p 18

[Excerpt]

Parliamentary reporter

The Mining Amendment Bill retained existing "iniquitous" provisions circumventing consent of landowners to use of their land for mining, the Federated Farmers of New Zealand said in a submission to the Commerce and Energy select committee at Parliament.

Every landowner had the right to require his prior consent before any use was made of his land which would disrupt his own use of it, the federation said in submissions on the Mining Amendment Bill.

The bill provides that landowners should be given three working days notice of a proposed application to a District Court for an entry on to private or Maori land. Under the existing act only 24 hours notice need be given.

If the consent were not given, the applicant should be guaranteed the right of appeal to the Planning Tribunal, the submission said.

However, if compensation and rehabilitation were "adequate," the consent of owners should not be a problem.

The federation sought a tighter definition of prospecting to exclude any possibility of mining. The bill allowed prospecters to "erect, maintain, and use buildings . . . plant and machinery, construct, maintain, and to use tracks, and engage in other works . . ."

It wanted direct access to the Planning Tribunal for local authorities which felt conditions recommended to the Ministry of Energy for inclusion in the licence had not been taken account of, and wanted the burden of work of the tribunal eased by setting up district bodies merging local and ad hoc authorities to hear small-scale applications.

Although it welcomed a reviewable bond payment by the applicant to the Crown to cover failure to comply with the terms of licences, the Crown should underwrite any shortfall in the bond, the federation said.

Accidents could sometimes arise outside the negligence of the depositor, and the bond should make good that damage.

The submission wanted local authorities to have powers to levy mining interests a fee based on the quantity of spoil removed towards local social amenities, and powers to levy special rates based on the value of extracted ore, not land or capital value. This would ensure that local residents were not subsidising the special activities of a mining company, or wear and tear on local amenities, such as roads.

Threat to National Parks

Wellington EVENING POST in English 2 Sep 81 p 12

[Text]

The Environmental Defence Society and the Royal Forest and Bird Protection Society today asked for special provision in mining legislation to safeguard national parks.

In a joint submission to the Parliamentary select committee considering the Mining Amendment Bill, the societies said there was considerable public concern at the increasing areas of national parks subject to application for mining privileges.

"The idea that national parks should be inviolate and for ever uncompromised by development is widely accepted overseas," the submission said.

"For example, mining is not normally permitted in national parks in the United States. There is a strong argument that could be put, that this position should apply in New Zealand as well.

In the submission to the Commerce and Energy, and the Lands and Agriculture select committees, the societies said an environmental impact report and audit by the Commissioner for the Environment should be required automatically where a mining provision of any kind was sought in a national park.

The submission also asked for a requirement that adequate public notice of mining applications be given nationally in newspapers.

In addition, the Commissioner of National Parks and the relevant park board should be given full standing to appear as of right before the Planning Tribunal.

The societies supported the repeal of the Mining Act's contentious provision allowing automatic conversion of prospecting licences to mining licences. — NZPA.

More Local Authority Sought

Auckland NEW ZEALAND HERALD in English 2 Sep 81 p 8

[Text] Submissions to parliamentary select committees yesterday urged that mining, like any other land use, should come under the provisions of the Town and Country Planning Act.

The committee hearing submissions on the Mining Amendment Bill was told that this might not be acceptable, considering the structure of the bill. But environmental organisations wanted greater local authority and public participation in mining applications, the commerce and energy and lands and agriculture select committees were told.

The submissions came from the Environment and Conservation Organisations of New Zealand, an alliance of 65 national and regional organisations, and Coromandel Watchdog, representing ratepayer associations, residents' environmental groups and holidaymakers using the Coromandel Peninsula.

The Environment and Conservation Organisations said conflicts would inevitably arise concerning the merits of different land use options, of which mining was one.

As the mines division and the Ministry of Energy were committed by law to promote mining, they were interested parties and should not be the ultimate arbiters in resolving land use conflicts, the group said.

Its submission said that the full provision of the Town and Country Planning Act should operate over all applications on non-state-owned land and water.

It favoured the setting up of a procedure which would provide the public with a channel into decision-making and a forum for the hearing of applications and objections.

The Coromandel group said local authorities, which would have a greater say under the Town and Country Planning Act, normally had the most appropriate and detailed land use expertise for their areas.

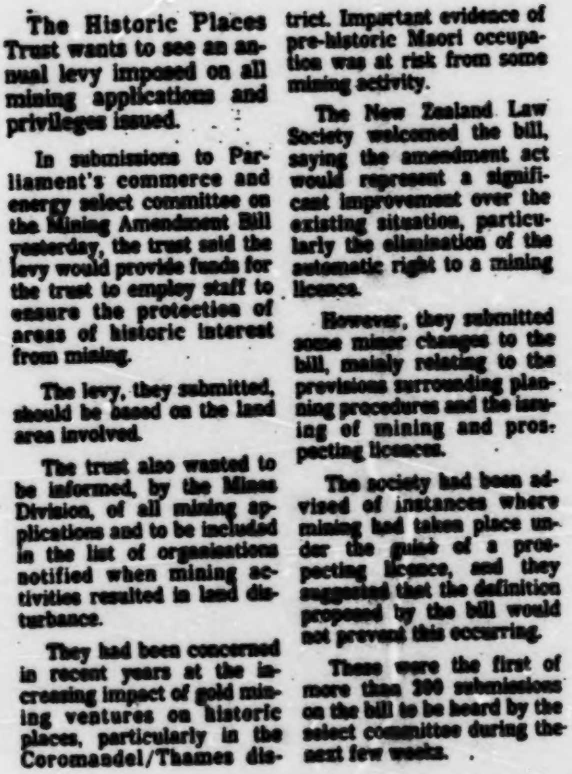
It added: "At the point in application proceedings where the minister notifies local authorities, catchment boards and other affected ministers, the applicant should be required to follow the procedures of the Town and Country Planning Act."

CSO: 5000/9044

HISTORIC PLACES TRUST WANTS LEVY ON NEW MINING

Wellington EVENING POST in English 19 Aug 81 p 10

[Text]



The Historic Places Trust wants to see an annual levy imposed on all mining applications and privileges issued.

In submissions to Parliament's commerce and energy select committee on the Mining Amendment Bill yesterday, the trust said the levy would provide funds for the trust to employ staff to ensure the protection of areas of historic interest from mining.

The levy, they submitted, should be based on the land area involved.

The trust also wanted to be informed, by the Mines Division, of all mining applications and to be included in the list of organisations notified when mining activities resulted in land disturbance.

They had been concerned in recent years at the increasing impact of gold mining ventures on historic places, particularly in the Coromandel/Thames district. Important evidence of pre-historic Maori occupation was at risk from some mining activity.

The New Zealand Law Society welcomed the bill, saying the amendment act would represent a significant improvement over the existing situation, particularly the elimination of the automatic right to a mining licence.

However, they submitted some minor changes to the bill, mainly relating to the provisions surrounding planning procedures and the issuing of mining and prospecting licences.

The society had been advised of instances where mining had taken place under the guise of a prospecting licence, and they suggested that the definition proposed by the bill would not prevent this occurring.

These were the first of more than 300 submissions on the bill to be heard by the select committee during the next few weeks.

CSO: 5000/9042

FISHING INDUSTRY BOARD OPPOSES COROMANDEL MINING

Auckland NZ HERALD in English 11 Aug 81 p 8

[Text]

Wellington

The Fishing Industry Board says it opposes substantial mining operations in the Coromandel.

The board does not favour establishing numerous medium-scale or a few large-scale mining operations in the area.

An economic research officer, Mr Alex Duncan, said there were high risks for commercial fisheries.

Mining made adequate long-term safeguards impossible, he said.

Tailings would be unable to be controlled with a repeat of flooding experienced on the peninsula.

Mr Duncan said widespread failure to restrain tailings could also have a marked and possible irreversible effect on the fish habitat, particularly in the Hauraki Gulf.

Experts

Increased sediment runoff would harm commercial fisheries through its effect on fish breeding grounds and on the food chain.

The acceptability of New Zealand fish on export markets, particularly fresh and frozen snapper, had been enhanced by emphasising the source of the fish as being from the "crystal clear" nature of New Zealand's southern oceans, Mr Duncan said.

"Even a suggestion in the minds of informed overseas buyers of New Zealand fish that inshore waters could be contaminated with increased heavy metal concentrations could be sufficient to impair export market development and cause inconvenience through increased scrutiny of New Zealand fish exports by overseas health authorities," he said.

Commitment

It was easy to build environmental safeguards into law but hard to enforce them.

Mr Duncan said it was often difficult to identify a culprit, particularly in an area of intensive mining by several different companies. Companies in an anaemic financial state might be unable to pay fines.

The board calls for a firm Government commitment that no third parties such as commercial fishermen would suffer any loss as a result of mining.

It suggests a Government levy on mining companies as insurance against a sudden calamity such as flooding which could cause widespread damage to the environment.

CSO: 5000/9042

OPPOSITION TO PROPOSED ALUMINUM SMELTER CONTINUES

Court Proceedings Instituted

Christchurch PRESS in English 27 Aug 81 p 4

[Text] The Environmental Defence Society has filed court proceedings challenging the Environmental Impact Report on the proposed Aramoana aluminium smelter.

The society's executive officer, Mr Gary Taylor, said last evening that the proceedings were filed yesterday in the High Court at Auckland and the Court of Appeal in Wellington.

The proceedings seek a declaration from the Court that the impact report is a nullity because it does not deal with the true significance of the smelter project.

Named as defendants in the proceedings are South Pacific Aluminium, Ltd; the Otago Harbour Board; the Commissioner for the Environment; and the Planning Tribunal.

Mr Taylor said the smelter would use all the available surplus electricity. Hydrodams would have to be developed on rivers which were free-flowing.

New Zealand's most beautiful wild, and scenic river would be destroyed to feed the smelter, he said.

"The smelter report ignores the implications of the electricity consumption of the smelter and is so narrow in its scope that it must be challenged."

Mr Taylor said if New Zealand was to have a "think big" strategy, developers had to face squarely the wider environmental consequences of their proposals.

"In our view, the deficiencies in the report are so serious and so fundamental that it comes close to making a mockery of the environmental impact reporting procedures."

Proceedings have been filed in both Courts, as there is uncertainty as to which has the jurisdiction to deal with the case.

Mr Taylor said a decision on jurisdiction was expected in two weeks.

Under the provisions of the National Development Act, the Court of Appeal had to give priority to this type of litigation.

Pollution Controls Doubted

Wellington EVENING POST in English 1 Sep 81 p 19

[Text]

DUNEDIN, August 31 (PA). — The Save The Otago Peninsula (Stop) group believes that South Pacific Aluminium is not prepared to control fluoride pollution at the proposed Aramoana smelter at the lowest levels the company itself has said are possible.

An information brochure produced by the company stated levels as low as 0.81kg of fluoride per tonne of aluminium produced from the smelter could be achieved, according to Stop.

But the company's environmental impact report states a standard of 1kg of fluoride per tonne will apply at Aramoana.

In its submissions on the impact report to the Commission for the Environment, Stop says the best possible, rather than the best practicable, standards should be imposed on the project.

It also states an annual emission of 6194 tonnes of sulphure dioxide is cause for genuine concern among peninsula residents.

"We, who live on the peninsula, are profoundly aware that several thousands of tonnes of air pollution and dust will be emitted to an area which is now free from any major form of air pollution."

Visual

Stop is particularly critical of the perspective diagrams in the report given on the visual impact of the smelter from the peninsula.

Stop says the drawings used are poor and misleading, and use different scales which confuse the actual size and effect of the smelter's impact.

The impact report gives no consideration to peninsula residents according to Stop. The report "reinforces our belief that we are the forgotten, the unimportant, the not-to-be-considered people."

Life

Stop's submissions detail in some length the quality of life that leads people to live on the peninsula.

"There are already signs of stress within the communities because of the possibility of the smelter. People have long been arguing the pros and cons and while the majority of residents are anti-smelter, in some cases it has led to decreasing interaction between certain individuals and has occasionally even split families.

"Because people see their values and their quality of life threatened, people are opening their minds to the possibility of moving away," the submission states.

Stop says even those moving are affected since the smelter weakens property values on the peninsula, because those who seek a life style there are put off.

The visual, noise and polluting impacts of the smelter will also affect the peninsula as it is used by Dunedin residents, and its wider role in the tourist industry, Stop says.

It says the consortium's claim that the smelter is unlikely to have an economic impact on peninsula farms does not provide a guarantee to farmers whose livelihood may be in jeopardy.

Stop asks the commission to recommend the consortium be required to instal a secondary pollution control system to capture pollutants that escape the main control system and would otherwise leak out of the potroom roof.

It says the potline buildings as proposed are not strong enough to support a secondary system should it be found to be needed later.

Stop is also asking the commission to recommend to the planning tribunal that a committee be established to monitor pollution damage from the smelter and negotiate compensation.

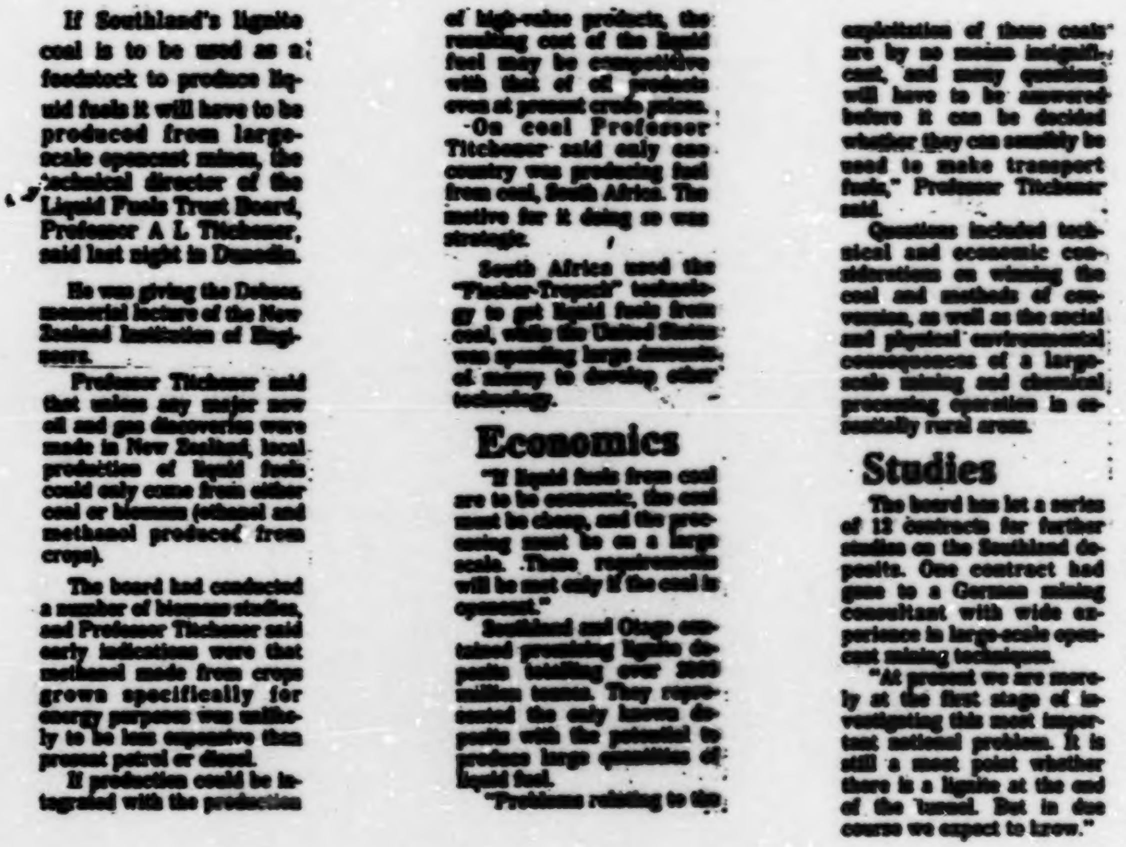
The committee should be financed independently from the consortium or Dunedin City Council and be made up entirely of independent people.

CSO: 5000/9044

COAL TO LIQUID FUEL MEANS LARGE-SCALE OPENCAST MINING

Wellington EVENING POST in English 13 Aug 81 p 10

[Text]



If Southland's lignite coal is to be used as a feedstock to produce liquid fuels it will have to be produced from large-scale opencast mines, the technical director of the Liquid Fuels Trust Board, Professor A L Titchener, said last night in Dunedin.

He was giving the Dobson memorial lecture of the New Zealand Institution of Engineers.

Professor Titchener said that unless any major new oil and gas discoveries were made in New Zealand, local production of liquid fuels could only come from either coal or biomass (ethanol and methanol produced from crops).

The board had conducted a number of biomass studies, and Professor Titchener said early indications were that methanol made from crops grown specifically for energy purposes was unlikely to be less expensive than present petrol or diesel.

If production could be integrated with the production of high-value products, the resulting cost of the liquid fuel may be competitive with that of oil products even at present crude prices.

On coal Professor Titchener said only one country was producing fuel from coal, South Africa. The motive for it doing so was strategic.

South Africa used the "Fischer-Tropsch" technology to get liquid fuels from coal, while the United States was spending large amounts of money to develop other technology.

Economics

"If liquid fuels from coal are to be economic, the coal must be cheap, and the processing must be on a large scale. These requirements will be met only if the coal is opencast."

Southland and Otago contained promising lignite deposits totalling over 2000 million tonnes. They represented the only known deposits with the potential to produce large quantities of liquid fuel.

"Problems relating to the exploitation of these coals are by no means insignificant, and many questions will have to be answered before it can be decided whether they can sensibly be used to make transport fuels," Professor Titchener said.

Questions included technical and economic considerations on winning the coal and methods of conversion, as well as the social and physical environmental consequences of a large-scale mining and chemical processing operation in essentially rural areas.

Studies

The board has let a series of 12 contracts for further studies on the Southland deposits. One contract had gone to a German mining consultant with wide experience in large-scale opencast mining techniques.

"At present we are merely at the first stage of investigating this most important national problem. It is still a moot point whether there is a lignite at the end of the tunnel. But in due course we expect to know."

CSO: 5000/9042

NEW ZEALAND

BRIEFS

FORESTRY PORT OPPOSED--Wellington (PA)--A proposed new forestry port at Marsden Point should not go ahead without further investigation, says the Commission for the Environment. The commission has released its audit of the environmental impact report on the scheme. The Northland Harbour Board wants to build the deep-water export port to cater for the region's increasing exotic timber industry. Forest products would be brought by rail to the port which would also be linked to the main rail system. The commission said proposals for the new port could not be taken any further till its possible effect on the stability and environment of Marsden Point had been determined. "The oil refinery and two thermal power stations are built on sand close to the entrance of Whangarei Harbour. Potential erosion problems must be studied and clarified before either economic or environmental studies can proceed further." Environmental impacts could be reduced if an export port was built closer to its forest resource, the commission said. It said major port construction could be postponed till after 1985 and suggested using existing ports at Opua and Whangarei as an interim measure. This would provide sufficient time for further studies to be completed so location of a new port could be considered in the wider context of a Northland regional planning scheme. In a separate audit of the environmental impact report on railway links to service the proposed new port, the commission said it favoured an inland route. Coastal routes would affect not only farmers and local residents but archeological sites and ecology of Whangarei Harbour. [Text] [Christchurch THE PRESS in English 27 Aug 81 p 16]

TIGHT POLLUTION CONTROLS--NZ Forest Products Ltd must report breakdowns in pollution-control systems at its Kinleith plant to the Health Department under a licence granted to the company under the Clean Air Act. Answering a question in Parliament from Mr Michael Minogue (Govt--Hamilton West), the Minister of Health, Mr Gair, said the licence, granted on June 29, contained five main conditions. They included the installation of odour-control equipment on the recovery furnace of the No 2 pulp mill, which started working last year, and a waste-gas control system for the No 1 and No 2 pulp mills to begin on October 31. New chloro-alkalide plants with emission limits as stringent as anywhere in the world were being installed in compliance with the licence, said Mr Gair, and were expected to start work in October. The company will also conduct a technical and economic review of all uncontrolled sources of odorous emissions before September 30, 1982 and report to the department before January 31 on the feasibility of incorporating the discharge from the turpentine plant into the waste-gas incineration system at

Kinleith. Mr Gair said the licence imposed further conditions covering the upgrading of equipment and a requirement to report any breakdowns which could lead to big emissions. [Text] [Auckland THE NEW ZEALAND HERALD in English 27 Aug 81 p 5]

MARINE PARKS PLANNED--There are plans to turn more of New Zealand's coastal areas into marine parks and reserves. Speaking in Hamilton yesterday, the Minister of the Environment, Dr Ian Shearer, said that two marine reserves had been set up in the Poor Knights Islands and at Cape Rodney recently. The Ministry of Agriculture and Fisheries was now looking at other areas for this. It was also carrying out a review of the legislation in order to broaden the purposes for which marine reserves could be established. Dr Shearer said that nearly 10 percent of this country's total land area had been set aside in national parks and other reserves. New Zealand had a world-wide reputation for preservation of this kind. By contrast, less than half of 1 percent of our territorial waters were in reserves. There was scope for doubling or trebling that without significantly affecting the growth and employment prospects of the fishing industry or the search for oil and minerals. Problems caused by pollution, siltation, and overfishing could be eased by the creation of more marine parks and reserves. [Text] [Wellington THE EVENING POST in English 1 Sep 81 p 15]

LOW RADIOACTIVITY LEVELS--Since 1976 recorded levels in New Zealand of strontium 90 and caesium 137, the two most potentially hazardous radioactive elements, have been the lowest since measurements were first taken in 1960. The findings have been released by the National Radiation Laboratory in the 1980 annual report on environmental radioactivity in New Zealand and the South Pacific. From 1976 to 1980 the average amount of strontium 90 measured at nine New Zealand stations did not exceed three megabecquerels per square kilometre. They were the lowest readings since monitoring started in 1960. The highest reading of 133 megabecquerels was recorded in 1964. There were atmospheric nuclear tests staged by Russia and the United States in 1961-62. During French atmospheric tests in the South Pacific from 1966 to 1974 average readings in New Zealand ranged from 9 to 51 MBq per square kilometre a year. The concentrations of strontium 90 and caesium 137 in New Zealand milk in the last four years were also the lowest recorded, said the report. Continuous monitoring had been conducted at five Pacific Island stations since French underground nuclear tests started in 1975. But no fresh fission products had been detected. The report said that levels recorded in recent years were very small and did not constitute a health hazard. The radiation dose resulting from long-term average levels was small when compared with the radiation from the natural background. [Text] [Christchurch THE PRESS in English 17 Aug 81 p 10]

MARINE LIFE PROTECTION--Among new fishing regulations gazetted today is protection for an Auckland regional park. The Ministry of Fisheries bans the taking of all forms of marine life from an area off the Tawharanui Regional Park. Extending about two kilometres west from Takatu Pt and 800 metres out to sea, the zone covers the rocky reef areas of the park's northern foreshore in Omaha Bay. "This marine extension to our largest coastal park is a new step for us and will be a great asset," said Mr F.C. Barber,chairman of the Auckland Regional Authority parks committee and the ARA-Rodney County Council combined committee, which is managing the protected zone. He said the zone was not connected with the separate marine reserve at Leigh. "This zone has been established to protect a particularly interesting area of marine life for the enjoyment of park users." [Text] [Auckland THE NEW ZEALAND HERALD in English 1 Aug 81 p 8]

NOTICE CALLS FOR HALT TO WATER POLLUTION

SK022238 Tianjin City Service in Mandarin 0030 GMT 2 Sep 81

[Excerpts] To cope with a serious water shortage and mobilize the people to conserve and protect water to overcome this crisis, the Tianjin Municipal People's Government on 29 August issued a notice on protecting the headwaters of the Hai He from pollution.

The notice states: Hai He is the source of our potable water. In confronting a serious water shortage, all people must work diligently to adopt resolute measures to keep the Hai He free of pollution to guarantee the quality of the water used in the people's daily life and in industrial production.

The notice states: The Hai He, south Yun He, Ziya and north Yun He rivers are designated as water source protection areas. Thirty mu of lands on both sides of these rivers are designated as sanitation protection areas.

The notice states: It is strictly forbidden for any unit or individual to discharge domestic sewage or industrial liquid waste in the water source protection areas. Water used for cooling purposes in plants should not be discharged unless it meets quality standards of surface water. It is strictly forbidden to wash clothes, dispose of rubbish and waste residue, use poison bait to catch fish or swim in the rivers. It is strictly forbidden to stack poisonous, harmful goods or rubbish, or conduct poisonous, harmful operations in the sanitation protection areas. Manure producing and livestock and poultry raising are strictly forbidden. Shacks built for temporary use in these areas must be demolished as soon as possible.

A spokesman of the municipal people's government made a statement on 1 September on Hai He water protection. He said: The notice issued by the municipal people's government on Hai He water protection is another major measure to conserve and protect water. All of us must attach great importance to and conscientiously and strictly abide by all rules and regulations of the notice.

He said: The Hai He is our major water source. It is a cistern for the city's 3.5 million people. If the Hai He river is contaminated, the danger to the people's life and health and industrial production would be unimaginable.

He said: There are two ways to protect the Hai He. One is to prevent pollution. The other is to prevent the river from becoming salty. The river is mainly contaminated by industrial liquid waste, discharge from city sluice gates [shizheng zhakou] and domestic sewage. The river water becomes salty because brine keeps blowing back in. Resolute measures have been adopted to stop brine from flowing back, such as closing the Hai He's sluice and lock gates. However, the lower reaches of the Hai He have already become salty and [words indistinct] the water's chloride content is relatively high. We will strive to control the salt content to guarantee fine quality water, but sometimes salty water is inevitable. Since the beginning of this year, we have adopted a series of measures to prevent pollution. For example, some plants on the river banks have stopped discharging waste water into the rivers. Some plants have adopted water purification systems. The opening and closing times of the city sluice gates have been strictly controlled. Irresponsible disposal and discharge has been strictly checked. These measures have proved relatively effective. However, cases of contaminating the Hai He water have been repeatedly occurring, and the river remains seriously polluted.

CSO: 5000/2169

INDUSTRIAL POISON POLLUTING CROPS

Manila BULLETIN TODAY in English 28 Aug 81 p 22

[Text] Dumaguete City, Aug 20--The Pagatban river here, dubbed as the home of the rare Philippine freshwater crocodile, has been converted into an industrial canal channelling poisonous effluents to the rich fishing grounds of the Sulu sea, eivironmentalists here reported.

As a result, farmers and fishermen here have petitioned the government to require Construction Development Corporation of the Philippines (CDCP), alleged owner of the copper mine, to install effective anti-pollution devices. One farmer in the area sued the company because of the damage pollution has wrought upon his crops, experts reported.

Dr. Angel Alcala, a leading environmentalist here, said "all the company needs to do is to build a tailing pond where toxic metals can settle and clean water filtered out into the sea." However, the firm apparently refused to invest in it.

To abate similar problem here, the provincial government has planned to establish an environmental impact review board to assess the factories that will be built in the province. (FTF)

CSO: 5000/4932

POLLUTION IN CANSAGA BAY KILLING FISH

Cebu City VISAYAN HERALD in English 17 Aug 81 pp 1, 2

[Article by J. S. Tundag]

[Text] A number of residents in four barangays around Cansaga Bay in Consolacion town, Cebu who depend on the marine productivity of the water of the bay and its vicinity are losing their means of livelihood because of gross water pollution in the area.

This was learned during a public hearing conducted the other day by Consolacion Mayor Emmanuel Pepito in barangay Tugtungan to facilitate numerous complaints from the residents around the bay about odor problems, low catch of fish and other sea foods.

Results from a study undertaken last August 3 to determine the general status of pollution of Cansaga Bay revealed that on the basis of biochemical oxygen demand (BOD) analysis and dissolved oxygen (DO) measurements, the water in the bay is heavily polluted with organic waste and wastewater from industries operating around it.

These industries have been identified as Asian Alcohol, Greenhills Farms, Virginia Foods Incorporated and Sandoval Shipyard.

The waste from these industries transformed into black, unsightly and malodorous anaerobic water.

The study, which was requested by Pepito and conducted by the Water Resources Center of the University of San Carlos, also revealed that the pollution may have affected some areas of the Mactan Channel since water from the bay flows out at low tide.

To counter this, the study proposed several alternative solutions to limit the pollution of the bay.

Among these are the construction of a common waste treatment plant, a common biogas plant or a submarine outfall into Mactan Channel via the Tayud peninsula.

Delegations from the affected barangays of Tugbungan, Jugan, Nangka and Tayud attended the hearing to air their grievances. Representatives from the various industires concerned weer also present to give their sides.

A spokesman for Asian alcohol tagged by local residents as one of the major polluters of the bay, disclosed that the firm has stepped up its pollution abatement program and that an analysis of its waste treatment program submitted to the National Polluion Control Commission (NPCC) has in fact, conformed to the specifications set by the pollution control body.

However, an NPCC report dated July 16, 1981 revealed that a continuous reddish effluent discharge has contaminated the shallow portions of the bay at and near the outfall of the said plant.

The report disclosed that the distillery has yet to install aerators and that its water treatment facilities were inadequate.

Odor emission characteristic of fermentation waste was also discernible beyond the property boundary of the firm,the report further stated.

Mayor Pepito told the Herald that the pollution of the bay has dated back to the mid-70's.

The town of Consolacion has protested before the NPCC in 1976 and has even entered into an agreement with the alcohol firm for abatement of its pollution of the bay but not all the requirements set forth in the agreement have been complied with, he said.

On the other hand, Dr. Antonio Trasmonte, the town's sanitation officer, dispelled fears that fish caught in these contaminated waters may pose some dangers when used for human consumption.

Trasmonte said that it is only the drop in oxygen levels in the water which causes the fish to die and not toxic substances.

Mandaue City Sangguniang Panlunsod Paterno Canete attended the hearing upon the invitation of Mayor Pepito.

It may be noted that Mandaue City also shares the problem since it borders the bay from the west and southwest perimeter.

A move to adopt the results of the USC Water Resources Center report as the official stand of the Consolacion Sangguniang Bayan regarding the matter was approved on mass motion by the body and will be forwarded to the NPCC for action.

CSO: 5000/4931

PLAN TO DUMP MINING WASTES IN SEA OPPOSED

Kuala Lumpur BUSINESS TIMES in English 7 Jul 81 p 6

[Article by Tom Levenson in Dumaguete]

[Excerpts] PLANS for dumping thousands of tons of copper mining waste into the Sulu Sea have ranged one of the Philippines' largest conglomerates against some of the country's top marine scientists.

The CDCP Mining Company, a subsidiary of the Construction and Development Corporation of the Philippines, produces 15,000 tons of copper ore a day from its mines on the Pagatban River in Negros Oriental, in central Philippines.

CDCP is mainly involved in construction work here and abroad but its mining subsidiary is among the top 10 in the copper industry.

However, the mine also produces huge quantities of tailings containing a variety of heavy metals, among them copper, iron and zinc. Researchers from Silliman University, located near the mine, charge that the tailings have already contaminated the river and nearby seas, and that the CDCP scheme to pipe the wastes offshore will only worsen the damage.

CDCP officials say the mining operations are so essential they outweigh any possible environmental destruction from the waste disposal plan. At the same time they maintain that damage would be minimal.

Said Virgilio Jordana, senior vice-president of CDCP Mining: "The ones creating all the agitation are not directly involved or concerned in the area. The Silliman people's sense of values and priorities is not correct. They place an undue emphasis on pollution.

"We think we are doing quite a good job in the area," Mr Jordana added. "We have 3,600 people earning way over minimum wage in an area that five years ago was a depressed region."

CDCP now controls its wastes in impounding ponds, which, as Mr Jordana acknowledged, overflows in the rainy season and leaks into the Pagatban River and the sea.

The output of tailings is expected to exceed the capacity of the impoundment ponds in seven or eight years and CDCP plans to to build a pipeline that will dump them one kilometre (1,000 yards) offshore.

Silliman researchers opposed to the plan, despite the mine's economic importance, began by checking the effect of CDCP wastes already present in the environment.

Chemist Stephen Lowrie, head of Silliman's research team, said that in the area off the Pagatban River they had detected toxic substances at levels high enough to kill marine life.

"You wipe out all the fish in the sea," he said. "It attacks the base of the food chain. Once you start getting over 20-25 parts per billion (ppb) of copper the plankton cannot take it nor can some fish and the young fry."

He said his research had shown levels reaching as high as 57 ppb during the dry season in the Pagatban Sea.

Said Mr Jordana: "We have a number of certifications from local fisherman that the number of Bangus fry in the area is not less than it was before the mine began working."

But Dr Lowrie charged that Bangus fisherman were taking one-tenth of the catch they could harvest before the mine opened.

"They got one fisherman involved in trading with them to sign a letter saying there are more fry now," he added.

Silliman scientists checked the effects of a similar pipeline being operated by Atlas, another mining company, on Cebu Island.

They reported that "within the vicinity of the pipeline there were specimens from 30 species but unfortunately all animals found were dead without exception. The seabed was heavily silted over a wide area...and fish life was very sparse."

"It can only be presumed that a similar pipeline in the Sulu Sea would have similar effects," the report said.

It added that the area of the Sulu Sea which the pipeline would use was one of the most important tuna fishing and spawning grounds in the Philippines.

CDCP officials said the pipeline received National Pollution Control Commission and Bureau of Fisheries approval but added that no environmental impact statement was filed on the project.

"The environmental impact statement is so complicated — the wording is lifted from foreign sources," one official said. "To prepare it would have cost one million pesos (US$125,000) and taken one year.

"We therefore appealed to a higher authority and were granted a permit without filing an impact statement," he said.

The only area of agreement comes in the assessment each side has of the other.

A CDCP official complained "We feel we are being harassed by the Silliman people. We tried to have a dialogue but we cannot get through to these people."

Said Dr Lowrie: "We are operating on a different wavelength. We have told them what our results show. At the start they did not know the harm they could cause but now they continue to say the same old things they said before."

Mr Jordana: "All we are trying to do is to develop resources and reemploy people in a distressed area."— Reuter

CSO: 5000/8024

SRI LANKA

ENVIRONMENTAL AUTHORITY TO ACT AS PLANNING, ADVISORY BODY

Kuala Lumpur BUSINESS TIMES in English 22 Jul 81 p 6

[Text]

SRI LANKA has taken the first painful step to ease its dependence on agro-chemical products for its fertiliser and pest control needs.

The Parliament has set up an Environmental Authority with wide-ranging responsibilities to preserve the country's vanishing forest cover, regulate the use of agro-chemical products and charter the government's environmental policies.

An advisory body, the Environmental Authority will function along the concept of a council; its members will be drawn from the various ministries, including Planning, Industries, Highways, Energy, Transport, Health and Tourism.

The creation of the Environmental Authority came in the wake of growing clamour for adequate measures against the dangers posed by agro-chemicals to Sri Lanka's agricultural lands, in particular, and the environment, in general.

Like many developing countries, Sri Lanka had heedlessly embraced the idea popularised by multinationals and proponents of the Green Revolution that agro-chemical fertilisers offered farmers the key ingredient to increased production.

But the price Sri Lanka has to pay for better farm output was beginning to tell heavily on croplands, the forest cover and the environment.

Various concerned citizens sounded the alarm over the reckless denudation of the forest and sought tighter controls on the use of chemical fertilisers, weed-killing chemicals, pesticides and fungicides.

The snowballing movement against the use of agro-chemicals for agricultural purposes became a dilemma for the government equally eager to increase agricultural productivity.

The erosion of the Environmental Authority seemed the only way to balance the dangers posed by agro-chemical products with the pressing imperatives of increased productivity.

A long-range planning body, the agency will survey and investigate environment-related problems and recommend to the government the possible solutions. It will also advise the government on the possible steps to be taken through both administrative and legislative means to prevent the further deterioration of the environment.

One of the major functions of the Environmental Authority is to educate the public on the need to preserve the ecological balance now threatened by the widespread use of agro-chemicals.

Last year, Parliament passed the Control of Pesticides Act. The law regulates the importation, packaging, labelling, storage, formulation, transport, sale and use of pesticides.

The law hopes to check the unbridled used of agro-chemicals that have been blamed for the fast deterioration of Sri Lanka's forests and the slow but steady decline of soil fertility.

After years of application, agro-chemicals burn the soil, killing its natural nutrients.

Under the law, a Licensing Authority for Pesticides and a Registrar will be appointed to handle the administrative functions of the agency. Another body, the Pesticides Formulary Committee, will beset up to take care of problems related to drugs.

With the establishment of environmental-related agencies, the free-wheeling dispensation of agro-chemical products will be a thing of the past. Under the law, anybody who may want to get a licence for the marketing of any pesticide will seek approval by proper authorities.

The regulation for the sale of pesticides requires that the licensee should provide the government with the name and the address of the manufacturer.

The law also requires that samples of the containers for agro-chemical products undergo rigid testing and the chemical composition of the product be stated on the labels.

Other requirements include toxicological data, information on antidotes and methods of determining the residue of the product.

Two other important provisions of the Act deal with measures to forestall contamination of foodstuffs. Under these provisions, it is illegal to store, transport, sell or offer for sale any pesticide along with foodstuffs or display the pesticide in such a way that it could contaminate foodstuffs.

The Act also declares that it is illegal to harvest or offer for sale any food crops in which pesticides were used until after the lapses of the time limit between the application of pesticide and harvesting.

The Environmental Authority said that once the regulations under the Act are formulated, instruments for detection and monitoring of pesticide level will be acquired.

In the past, the monitoring of pesticide levels in plants was hampered by the lack of sensitive equipment needed to detect the minute particles in pesticide residues.

But now authorities, pressed by popular demand to act on the growing menace to people's welfare posed by agro-chemical products, are moving swiftly to check the peril.

The movement against the indiscriminate use of pesticides started slowly, but now there seems to be no turning back for Sri Lanka. — Depthnews

CSO: 5000/8025

ENVIRONMENTAL IMPROVEMENTS IN NORTH BOHEMIA DISCUSSED

Prague PLANOVANE HOSPODARSTVI in Czech No 7 1981 pp 38-42

[Article by Eng Dr Lubos Skoda, State Planning Commission: "Improving the Environment in the North Bohemian Region"]

[Text] For most of the citizens of our country, mention of the North Bohemian Region connotes millions of tons of mined coal, thousands of kilowatt hours of electrical energy, and successful plan fulfillment under difficult climatic conditions at open-pit mines and in transportation, which is the picture painted of this region by television newscasts. A visitor to the basin portion of the North Bohemian Region will remember this area in terms of great expanses of ruined spruce forests, unbreathable air, and a lunar-like landscape. An inhabitant of this part of our nation, however, sees in it a home, where he has found work and where he wants to live permanently with his family, or at least get one started.

Problems connected with the devastated environment, however, affect him intimately, and restrict his full enjoyment of the results of his work. Some people succumb to this unfavorable pressure and leave the area. Unfortunately, migration figures show that so far there are more of these people than of those who move to the area, as the following table shows:

	1971-1975	1976-1979
Region as a whole	-8801	-3411
broken down by district:		
Chomutov	187	1729
Most	-2279	-4256
Teplice	-2453	-2014
Usti nad Labem	- 603	98

It is possible to state with great certainty that environmental conditions, and above all air quality, are to a great extent responsible for this migrational trend (in spite of various preferential measures). As I have noted, different views are possible regarding the North Bohemian Region. What, however, is the reality, and what measures will be undertaken to stop the negative developments in environmental conditions? I will attempt to express my views on these questions in this article. Due to the limited length and restricted focus of this article, and the unresolved nature of many of the issues connected with these problems, the information presented here must be seen as far from exhaustive.

The North Bohemian Region is the smallest in the CSSR. It occupies 7,809 square kilometers of territory and is the home of 1,163,976 people (as of 1 January 1979). Its population density of 149 inhabitants per square kilometer, however, ranks it among the most densely settled Regions. It is of great importance for the economy of the entire nation, principally due to the fact that it occupies a priority place as the fuel and energy base of the country. More than 70 percent of national brown coal production comes from the North Bohemian Brown Coal Region. Approximately 35 percent of nationwide electrical energy output is produced in the region. It also produces a significant percentage of the total output of the chemical industry (at the Zaluzi u Mostu CSSP Chemical Factories, the Usti and Labem Corporation for Chemical and Metallurgical Production, the Lovosice Slovak Chemical Factory, and others), of the glass and ceramics industry, and of the heavy engineering industry (the Chomutov VTZ). Despite the great appropriation of agricultural land as a result of the development of coal production and extensive capital investment, agriculture is also important to the region, above all the raising of hops, fruits, and vegetables.

Neither industrial production nor coal mining are distributed evenly throughout the region. They are concentrated to a great extent in the so-called basin regions such as Chomutov, Most, Teplice, and Usti nad Labem.

A sharp rise in the mining of brown coal based on surface extraction technologies, the production of electrical energy by burning sulphurous brown coal in large thermal electric power plants, and industrial production (especially of chemical products) have all served to concentrate negative environmental consequences in this area. These negative trends include the extensive annexation of agricultural land and the liquidation of settlements, a change in the regional landscape through the gradual progression of the recultivation of waste dumps, as well as the pollution of water sources, excessive environmental noise, the gradual death of vegetation, but above all a seriously worsening situation regarding air quality. This is the most common and most serious problem for the environment of the region in question.

For this reason, I am consciously limiting the issue of environmental preservation solely to the question of air quality. In the basin, a whole range of harmful substances from various sources is emitted into the air. These include nitrogen oxides from combustion processes and from the production of nitrogenous fertilizers, hydrogen sulfide and mercaptans from gas plants, hydrocarbons from chemical production, chlorine, hydrogen chloride, and a number of others. The most serious emissions, however, in terms of their amount, are flue ash and sulphur dioxide, which are emitted from the smokestacks of the electric power plants and thermal power stations which burn coal from the local mines. The emission burden on the North Bohemian Region of both solids and gases per square kilometer is extraordinarily high in comparison with the average for the CSSR, as the following 1975 figures indicate:

tons/square kilometer/year	CSSR	CSR	SSR	North Bohemian Region
solid emissions	14.0	16.5	10.0	39.5
sulphur dioxide	22.0	26.8	16.3	118.5

Sulphur dioxide emissions have been increasing constantly since 1970, a trend which we expect to continue because of the starting up of new sources (the Prunerov II electric power plant) and because of the constantly deteriorating quality of the coal being consumed (higher sulphur and ash content, lower heat value). The emission level will peak roughly during the second half of the 1980's or at the start of the 1990's. It is a trend that may be influenced positively around 1990 and thereafter, to the extent that desulphurization apparatus will be installed in several large power plants.

Ash emissions have roughly stagnated and one may assume that they will remain at an acceptable level, provided however that sufficient service and maint provided for the fly-ash precipitators at the power plant units.

Ash and sulphur dioxide emissions in the North Bohemian Region have followed the following trend (in millions of tons per year):

	1970	1975	1980	1985	1990
solid emissions	0.35	0.28	0.32	0.36	0.36
sulphur dioxide	0.59	0.80	0.96	1.29	1.25
given the desulphurization of two large power plants					0.75

Emissions of sulphur dioxide are such that its maximum permissible daily concentration (0.15 milligrams of SO_2 per cubic meter) is exceeded on approximately 80 days each year, primarily in the winter months, in the air of the entire basin region and the contiguous parts of neighboring districts (part of the Loun district, the Litomerice district, the Lovosice and part of the Decin districts). On certain occasions the measured average daily concentration has been 2.0 milligrams per cubic meter and more, which represents a concentration 13 times greater than the maximum on the days in question.

It is expected that the number of extraordinary situations in the basin area of the North Bohemian Region will increase in proportion to the growth in sulphur dioxide emissions, especially at times of unfavorable meteorological conditions (thermal inversions of several days duration, and fogs), and that as a result the extent of these negative phenomena will also expand.

Polluted air has negative effects in many areas, above all on public health, forest growth, and agriculture.

Air pollution manifests itself most significantly in the health of children. It has been shown that children from the basin districts suffer more from diseases of the breathing passages, have delayed skeletal development and changes in their blood profile which reduce the defensive capabilities of the organism against disease.

Similarly, polluted air has a negative influence as well on older people. It has been stated in scientific literature that a 3-week stay for a child in an area with good air exerts a positive influence on its health which last for 3 months after the return home. For this reason it is of the highest priority to make it possible for the largest possible number of children from the basin region to stay at "schools in nature" at least twice during the school year, and to see that they receive preferential treatment for vacation in children's camps. The harmful effects of emissions are especially evident on the conifer forests of the Krusny Mountains. The common spruce is unusually sensitive to the effects of sulphur dioxide. The development of damaged forest stands in the North Bohemian Region has displayed a sharply increasing trend which parallels the growth in its emissions. The following table presents the current level of forest damage, employing a five-category classification system for stands of trees (according to damage severity):

Area of afflicted stands (in hectares)

Level of Damage	0	1	2	3	4	total
1960	150,658	18,328	6,395	1,195	57	176,634
1970	122,241	34,854	12,568	3,822	487	173,972
1975	117,476	30,917	17,734	4,277	1,226	171,630
1979	13,126	78,930	39,357	23,474	12,129	167,016

where 0 = nondamaged stands; 1 = lightly damaged stands; 2 = moderately damaged stands; 3 = heavily damaged stands; 4 = dying stands.

The damage to large forested areas is not limited only to the Krusny Mountains and the contiguous areas (the Central Bohemian Highlands), but is already evident as well in other parts of the Republic. There has also been extensive damage to forests in the Jizersky and Luzicky Mountains, which has come about from emissions from large electric power plants in the People's Republic of Poland and the German Democratic Republic.

Agricultural damage is not as severe when compared with forest management. A negative influence is discernible above all in plant production, where crop yields have been reduced significantly in areas affected by emissions. It is estimated that damages to plant production as a result of emissions in the North Bohemian Region amount to about Kcs 150 million annually.

Party and state organs have been concerned with the issue of environmental preservation since the end of the 1950's. In 1960, Government Resolution No 494 was approved (Measures for the Efficient Resolution of the Problem of Air Pollution), which was meant to have nationwise applicability. It directed sectors and enterprises to take responsibility for outfitting operations which produce emissions with equipment designed to reduce them and which reflects the latest scientific and technical developments. The objectives of the Government Resolution have been met only in the Ostrava District, and there only with significant delays. In view of the specific difficulties facing the basin areas of the North Bohemian Region, the Government has adopted a number of other resolutions for assuring the preservation of the environment, which have contained a set of concrete projects, the implementation of which is directed at the halting of negative developments in the environment, especially in the area of air pollution. It must be stated that the assigned tasks have not been fulfilled completely. This is particularly the case for projects designed to affect sulphur dioxide emissions, even though positive results have been achieved in the reduction of other emissions, above all flue ash.

/In accordance with the conclusions of the 15th CPCZ Congress, the CSSR Government Presidium has adopted Resolution No 252/1976, and the CSSR Government Resolution No 91/1976 regarding the Comprehensive Resolution of the Environmental Issue from 1976-1980 in the Basin Districts of the North Bohemian Region, which contains a set of investment projects and measures aimed at a solution of the problem. An inspection of their fulfuillment is conducted regularly at various levels. It is, however, necessary to state that the relevant organizations do not approach the fulfillment of tasks in the area of environmental preservation with the same effort with which they approach the fulfillment of production targets. Most of the tasks have been fulfilled after significant delays, and some are to be implemented in the course of the 7th Five-Year Plan (for instance the desulphurization of expansion gases at the Uzin Pressure Gas Plant)/ [in boldface].

Also, the implementation of several costly investment projects is being considered for the 7th Five-Year Plan, all of which should contribute to a reduction in emissions. The following projects should be mentioned in particular:

-- the desulphurization of expansion gases at the Uzin Pressure Gas Plant;
-- experimental desulphurization equipment at the 200 megawatt unit of the Tusimice II electric power plant;
-- rebuilding the fly-ash precipitators at electric power plants.

It is, however, necessary to emphasize that there will be no significant improvement in sulphur dioxide emission levels during the 1981-1985 period, because such a reduction may be achieved only by introducing desulphurizing equipment for the flue gases at several electric power plants in the basin area. The construction of experimental desulphurizing units at the first unit of the Tusimice II power plant should be initiated in 1983, which means that their influence will not be evident before the end of the 7th Five-Year Plan. As I have stated, sulphur dioxide emissions will continue to increase after 1980. For this reason, it is necessary to provide in an accelerated manner for the implementation of experimental desulphurizing units, and to prepare for the construction of a desulphurizing capacity at additional electric power plant units. These are the only steps which can influence favorably the air quality in the basin area of the North Bohemian Region. An additional factor we cannot ignore is the fact that a byproduct of desulphurization can be sulphuric acid (and in significant amounts), which we now have to import.

Since it is impossible to influence substantially over the short term sulphur dioxide air pollution, so-called compensation measures have increased in importance for the 7th Five-Year Plan. These are measures intended to eliminate partially the negative influences of this pollution on the health of the inhabitants of the affected regions, above all the children. This is a matter of the broadest possible organization of "schools in nature," the indubitable rehabilitation influences on the health of children which has already been mentioned. In addition, these projects are of widely varying character and include:

-- serving free, vitamin enriched snacks at the schools;
-- preferential treatment for children from affected regions for placement in sanatoriums, children's camps, spas, recovery centers, and for vacations near the ocean;
-- priority allocation of vouchers for discretionary domestic and foreign recreation, and for spa treatment for employees from the basin districts;
-- discounts on trips to recreational areas with clean air;
-- the planting of green areas at settlements.

The assurance of these measures is, above all, the task of the North Bohemian Regional National Committee. Their successful fulfillment of this task, however, will depend also on the assistance and cooperation above all of the central agencies of state administration, the Central Trade Union Committee, and the understanding of the remaining regional national committees in the CSSR.

/Environmental preservation in the North Bohemian Region has the same nationwide significance as the mining of brown coal and the production of electrical energy. The development of industrial sectors in this region will always be problematic as long as a stable work force cannot be assured, and this depends to a large extent on enviornmental quality/. [in boldface]

9276
CSO: 5000/3025

WATER SHORTAGE IN WEST TONOTA REPORTED

Gaborone DAILY NEWS in English 20 Aug 81 p 1

[Article by Robert Ditshwang]

[Text]

FARMERS living on the western side of the railway line in Tonota are complaining that their cattle are dying in great numbers because of acute shortage of water in the area.

This was disclosed by the Chairman of Tonota District Show Committee Mr R.W. Bogatsu. He is also a member of the Shashe Brigade Executive Committee.

He told BOPA that the matter had been put before the Ministry of Mineral Resources and Water Affairs to install watering points at various places in the western side of the railway line.

The watering points should be near the cattle posts, away from the Shashe Complex.

He pointed out that they were promised by the Ministy of Mineral Resources and Water Affairs a month back that they would be relieved of the bad situation but nothing had been done.

He said that cattle were dying in big numbers during Summer when the pans in the area were dry.

Farmers also appealed to the government, as a temporary measure to build a dam near Shashe Dam for cattle to prevent them from drinking in the middle of the dam.

Meanwhile the Tonota Sister In-charge of the clinic Mrs G.E. Ontumetse has expressed her concern about the shortage of staff and equipment.

She said this has resulted in difficulties when attending patients.

In an interview with BOPA, Mrs Ontumetse said that in most cases patients wait for long hours without being attended.According to Mrs Ontumetse the clinic has only seven nurses.

She also told BOPA that they intended to rennovate the old clinic in the North of the village to relieve patients from walking long distances from their homes to the clinics.

She appealed to the Central District Council (CDC) to provide the clinic with more staff and equipment.

Mrs Ontumetse said that Tonota residents were health conscious. They always consult with the clinic staff on health matters.

CSO: 5000/5059

BRIEFS

NEW AL-QASH FLOODING--Kassala, Aug. 1 (SUNA)--Al-Qash river level registered yesterday a surprise and recorded high rise, damaging houses and leaving many people homeless. The recent rise followed torrential rains south east of Kassala and affected al-Qash delta area. The river level reached 195 centimetres compared with 175, the highest level until yesterday's rise. Floods surrounded Waggar [Madalai] and [Matanib] towns and many other villages. Fruits canning factory and the East museum were also affected. Eastern Region governor Hamid 'Ali Shash, Deputy governor and Regional Ministers hurried to the affected areas to inspect the situation. The governor ordered concerned authorities to mobilize all efforts and abilities to put al-Qash river under control and prevent further damages. Militarymen and police and prison forces are currently exerting efforts to stop more flooding and to block water outlets. The situation was brought under control yesterday morning after the river level slightly recorded. Meanwhile the Kassala province's security committee held a meeting and agreed to extend emergency aids to the affected people. [Text] [Khartoum SUNA DAILY BULLETIN in English 1 Aug 81 p 1]

FLOODING IN EASTERN REGION--Khartoum, September 10--Torrential rains in Eastern Sudan have left about 1,000 people in El Hawate area homeless and three in Qalaen Nahl area dead, the Sudanese News Agency (SUNA) reported. Displaced people were being accommodated in schools and medicines, food and tents were being rushed to the affected areas, the agency said. [Paris AFRICA AFP in English No 2827, 11 Sep 81 p 12]

CSO: 5000/5000

SAFETY OF ASBESTOS INDUSTRY WORKERS ENDANGERED

Salisbury THE SUNDAY MAIL in English 13 Sep 81 p 5

[Text] **FEARS are growing for the safety of the asbestos industry's 12 000 workers.**

These fears were expressed by the Director of Occupational Health and Safety, Mr Frank Belloiy, in an interview last week. He said: "The split in safety enforcement controls for the asbestos industry between the ministries of Mines and Labour and Social Services is making work conditions unnecessarily hazardous for workers. This is because there is no continuity of enforcement, too many cooks spoil the brew."

Uncontrolled exposure to asbestos can cause asbestosis, a chronic lung disease and other asbestos related diseases, but most commonly mesothelioma a respiratory cancer perculiar to asbestos, exposure.

Evidence has shown the major sources of exposure to asbestos are in the primary occupations of mining and processing of asbestos and the secondary occupation such as the manufacture of textiles and insulation.

In Zimbabwe the mining of asbestos dates back to 1920 although the use of asbestos goes back thousands of years.

In this country the industry has grown so rapidly to a point where production has doubled since 1960 and now the country exports 250 000 tonnes of raw asbestos a year. This gives the Treasury an estimated $70 million in foreign exchange; its value is second only to gold in the mining industry.

ANTIQUATED

The Director of Occupational Health and Safety said: "The machinery used in the asbestos industry in this country is antiquated, so that the sources of exposure to asbestos dust are too many."

The chief mining engineer in the Ministry of Mines, Mr Patrick Phiminster, disagrees with Mr Beloiy.

"The mines at Shabanie and Mashaba are showpieces. The control of asbestos dust in work places is the key to the safety of the workers. At Shabanie and Mashaba there are well-maintained systems of ventilation and this is the answer to the problem," he said.

However, Mr Phiminster conceded that controls in the older mines and mills were not so effective, and those would eventually be phased out.

STUDIES

Studies carried out in Zimbabwe over a five-year period 1963-67 by Gelfand and Norton disclosed 39 cases of asbestosis among 8 336 employees.

Mr Beloiy said: "Even these statistics, as staggering as they may appear, are not truly reflective of the health of the people concerned.

"We need a follow-up on the people who are fired or who retire. There is evidence that people have died from asbestos-related diseases several years after leaving work places which handle asbestos or products containing asbestos."

The Permanent Secretary to the Ministry of Mines, Mr Christopher Ushewokunze, said: "There is no question of restricting the production of asbestos in this country. The mineral is far too valuable to the foreign exchange earnings of a developing nation such as ours.

"We feel that the safety mechanisms we have in operation are sufficient to provide adequate protection for workers in asbestos-related industries. Improvements have been carried out in the health and safety of the workers. There is really no evidence of people being incapacitated due to their work with asbestos."

CSO: 5000/5058-E

BRIGHT NEWS FOR FISHERIES DESPITE OIL 'WAR'

Nicosia CYPRUS MAIL in English 29 Aug 81 pp 1, 4

[Text] **FIGHTING pollution is one of the activities of the Fisheries Department and there was a heavy demand on the Department's resources in this respect during last year.**

This is brought back to light in the Department's annual report for 1980 which says that the operations to combat pollution which was caused by the sinking of the Swedish vessel «Zenobia» overshadowed other activities.

From mid-June to practically the end of August most of the staff and facilities of the Department were engaged in the «Zenobia» operations, the report says and recalls that the sinking two miles from Larnaca developed a constant leak of heavy fuel oil which polluted the tourist beaches.

The successful operations that followed were coordinated and directed by the Fisheries Department. The operation cost about £340,000 and apart from the oil dispersed about 300 tons of oil were pumped from the ship's hull and handed to the Cyprus oil refinery.

However, the Department carried out most of its normal functions with emphasis given in the planning of the new station which is to be built for work on marine aquaculture.

Experimental work on aspects of marine farming has started in cages in Paphos and in Nicosia in closed systems. (Species such as sea bass, sea bream and shrimps are being experimented with).

Development work on sponge fishing was also intensified with good results.

In its section about the fishing industry the report says that fish and sponge fishery production in 1980 was 1,304 tons — warth about £1.9 million.

There was a tendency in the year for diversification of production with increases in the distant waters trawl fishing and in sponge fishing.

«Health trends» were noticed in the swordfish fishery and trout farming. Local demand for swordfish is increasing and the fish is served regularly in many hotels and restaurants and demand for trout has also increased for both fresh and smoked products and the supply could not meet demand at all times.

The turtle project and snail culture schemes were also continued during the year.

During the year 45 nests with 3,250 eggs of turtle were hatched under complete protection. Most of them were transplanted while some control «wild» nests were monitored.

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END

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3 November 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 327

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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ENVIRONMENTAL QUALITY

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EPA EYES MINERAL EXPLOITATION, CONSERVATION BALANCE

Perth THE WEST AUSTRALIAN in English 14 Sep 81 p 13

[Text]

There must be a balance between exploration of the mineral potential of the Kimberleys and the need for conservation reserves in the area, according to an Environmental Protection Authority report.

The System 7 report, released yesterday, contains recommendations to the State Government for the creation of conservation reserves in the Kimberleys.

The report said that the rights of mining and petroleum tenement holders must be respected.

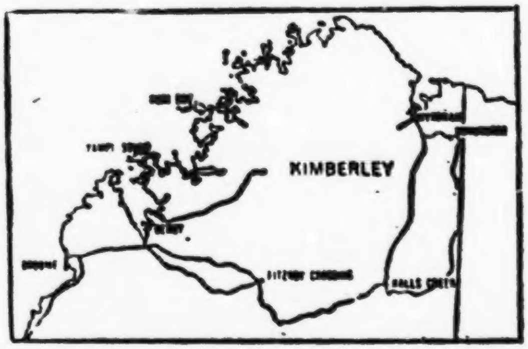
"These areas should be excised from the areas which are the subject of our recommendations," it said.

"However on the expiration or relinquishing of any tenement, the question of reservation in accordance with our recommendation should be considered."

POTENTIAL

The report said that the EPA recognised the high mineral potential of the Kimberleys and the need for systematic exploration.

It said that significant progress had been made in exploration. As more base-line scientific data—such as geological mapping and biological surveys—become available, rational solutions should be achieved in areas of conflict.



According to the report, the new Mining Act, now being reviewed, made reference to referral and consultative mechanisms which would apply to mineral tenement applications in all types of reserves and national parks.

TOURISM

In the report the EPA recognised the potential of some areas for tourism.

These areas include Hidden Valley and Lake Argyle near Kununurra.

The report said that Hidden Valley was an important tourist and recreational attraction and contained important Aboriginal sites.

"Concern has been expressed that unless some controls are exercised, the area could be subject to over-use and vandalism," it said.

The report recommended that part of vacant Crown land containing Hidden Valley be set apart as a class A reserve for a national park and vested in the National Parks Authority.

It also recommended that the National Parks Authority consult the traditional owners of Hidden Valley during preparation of a management plan.

In the report the EPA said that it recognised the importance of Lake Argyle as a tourist attraction. It did not consider that the recommendations should prejudice the area's tourist potential.

It recommended that the area including the Carr Boyd Ranges and the islands in Lake Argyle be declared a class C reserve for national park.

The Premier, Sir Charles Court, said yesterday that the report had been considered by the Cabinet and would serve as a guide for establishment of conservation reserves.

"The Government has reaffirmed its support in principle for the establishment of conservation reserves throughout the State," he said.

"However, it has become increasingly apparent that in order for the community to benefit to the maximum extent from the creation of reserves, the final form that they take should be considered separately and take account of all possible uses of such reserves."

CSO: 5000/7504

AUSTRALIA

NSW FORESTRY CHIEF WARNS OF OVERCUTTING, OTHER PROBLEMS

Sydney THE SYDNEY MORNING HERALD in English 16 Sep 81 p 3

[Article by Joseph Glascott]

[Text]

The NSW Commissioner of Forests, Dr Wal Gentle, has warned his senior officers against allowing forests to be over-cut by saw-loggers.

In a speech to officers he said: "We have had too many of our big management areas where the data and the statistics indicate that, without doubt, they are being over-cut."

His warning was given in an address to a senior officers' conference on June 4 and 5.

His speech was leaked to the Total Environment Centre, which issued it yesterday.

Dr Gentle told his officers that management plans were a number-one priority in the management of State forests. Management plans were now very important public documents which backed up any environmental impact by forestry activities.

Logging quotas were an important element of management plans.

"You will have noted that there has been a hardening line towards over-cutting, particularly in the past 12 months," he said.

"If you are in any doubt about what you should be doing on the quota side, it is definitely to pull things back towards the sustained yield principle, which is really the cornerstone of all forestry at the field management level."

Dr Gentle told the officers that they would be required to set financial targets in each forest management unit from this financial year.

"That document so far has just recorded history, and most of it fairly dismal (it shows we are making a loss on nearly everything), but the document is now going to have a prediction element put into it," he said.

He said the field performance on erosion control was sometimes too sloppy.

"Terania Creek got itself into the spotlight over the impact our operations were supposed to make on the rainforest," he said. "The fact that it is not rainforests, got to be beside the point."

Dr Gentle said that for environmental reasons the clearing of native forests for timber plantations was "just about out."

"Perhaps one more year of it and we will be on to land, and have to be on to land, which is substantially cleared in order to keep going in line with the pressures and policies of the Government," he said.

He said national parks now had most of the land they required for representative natural areas.

"Anything that is left in the Crown land coffers, if we want it now, should not be subject any longer to sympathetic feelings for the National Parks Service," he said.

The assistant director of the Total Environment Centre, Mr Jeff Angel, said yesterday: "The speech by Commissioner Gentle shows our forest estate is being drastically over-cut; that management plans have been a low priority; that royalties are too low; and soil erosion controls ignored.

"The biggest loss to the people of NSW and Australia has been the damage to our native forests, wildlife and rivers.

"The Government should reform the Forestry Commission. It is a political embarrassment.

"The future of our native hardwood forests and rainforests is at stake."

Dr Gentle said yesterday that his speech was an "in-house pep talk such as you might give to a football team" soon after he took over as commissioner.

He said all the officers at the conference knew he was referring to the Grafton management district when he talked about over-cutting. But this problem had been corrected by a 25 per cent reduction in logging quotas last year and a further 25 per cent in four years time.

He said his reference to the commission's accounts showing a "loss on nearly everything" was a "throwaway line" to indicate to officers that they must do better. He said the commission was not expected to make a profit.

He said his reference to soil erosion was to let the officers know that there were too many minor technical breaches of the commission's standard erosion mitigation conditions.

"The situation has vastly improved in the last six months," he said. "Erosion condistions are now being observed very tightly."

CSO: 5000/7504

LABOR, DEMOCRATS BACK STUDY OF TASMANIA ENVIRONMENT

Melbourne THE AGE in English 10 Sep 81 p 5

[Text]

CANBERRA — The Federal Opposition is to support a proposal for a Senate select committee of inquiry into the environmental value of south-west Tasmania.

The inquiry would also study whether Federal financial assistance might be necessary to preserve the wilderness and to meet future energy needs.

The Australian Democrats have already given notice that they will attempt to set up the inquiry by a vote in the Senate. The ALP and the Democrats need the vote of at least one Government senator to get the motion through. The independent Tasmanian Senator Harradine, is expected to vote against the proposal.

Tasmanian Liberal Senator Rae said last night that he might support the proposal, because he had an interest in and concern for south-west Tasmania.

But Senator Rae said he would make no commitment until he had studied the proposals.

The ALP Federal Caucus yesterday decided to support the Democrats' proposal, but will seek a slight amendment to the terms of reference of the proposed select committee.

The ALP proposition is:

"That a select committee, to be known as the select Tasmania, be appointed to committee on south-west inquire into and report on (A) the natural values of south-west Tasmania to Australia and the world and:

(B) Federal responsibility in assisting Tasmania to preserve its wilderness areas of national and international importance, including appropriate financial assistance consistent with the State's development and energy requirements."

"There is a very great need for a Federal examination of the environmental and energy issues involved," the ALP spokesman on environment and conservation, Mr West, said yesterday. South-west Tasmania is on the register of the National Estate and nominated for world heritage listing.

"As the three major hydro schemes under current discussion involve capital expenditure ranging from $900 million to $600 million obviously Loan Council funds are involved in at least 50 per cent of the total capital costs," said Mr West. He said the ALP wanted the committee to be established as soon as possible.

CSO: 5000/7504

FRANKLIN DAM PLEBISCITE STIRS POLITICAL ROW IN TA[illegible]IA

Call for Lowe's Resig[illegible]on

Canberra THE AUSTRALIAN in English 24 Sep 81 p 1

[Article by Peter Dwyer]

[Text]

TASMANIANS will not get the chance in a coming referendum to oppose the building of a dam in the State's south-west wilderness.

The State Government instead decided to give voters only the choice of which of two dams should be built.

Yesterday the Parliamentary Labor Party ruled out the possibility of a "no dams" option in what the Premier, Mr Lowe, said was an overwhelming vote.

Angry conservationists claimed they had been disenfranchised by the decision, and said the referendum would be a farce and not binding.

The decision is seen as a rebuff for Mr Lowe, who was believed to have favored the no-dams option.

But outside Parliament yesterday he said the Labor Government had always supported continuing hydro-electric development.

The referendum question will say the Government, the Opposition and the Legislative Council supports a hydro dam on the Gordon River.

It will then give the electorate the choice of a dam above the junction with the Olga or below the junction with the Franklin.

In Parliament the Opposition Leader, Mr Pearsall, accused Mr Lowe of an about-turn on the no-dams option.

Mr Pearsall said Mr Lowe had told the press there would be such an option. He asked Mr Lowe if he was prepared to do the "honorable" thing and resign.

Mr Lowe said: "The Tasmanian Government is committed irrevocably to hydro development for the next two decades and the Government could not accept the decision for no dams at all.

"The parliamentary party has voted overwhelmingly for the course of action I have just outlined, and the Government stands firmly — to a man — behind it."

Outside the Parliament, Mr Lowe called on the conservationists to back the Gordon above Olga dam, which would save the Franklin River.

But a leading conservationist, Dr Bob Brown, said the Government's decision had made a mockery of democracy in Tasmania.

"The majority of Tasmanians, and for that matter Australians, will be outraged by this decision to disenfranchise probably the majority of the electorate," he said.

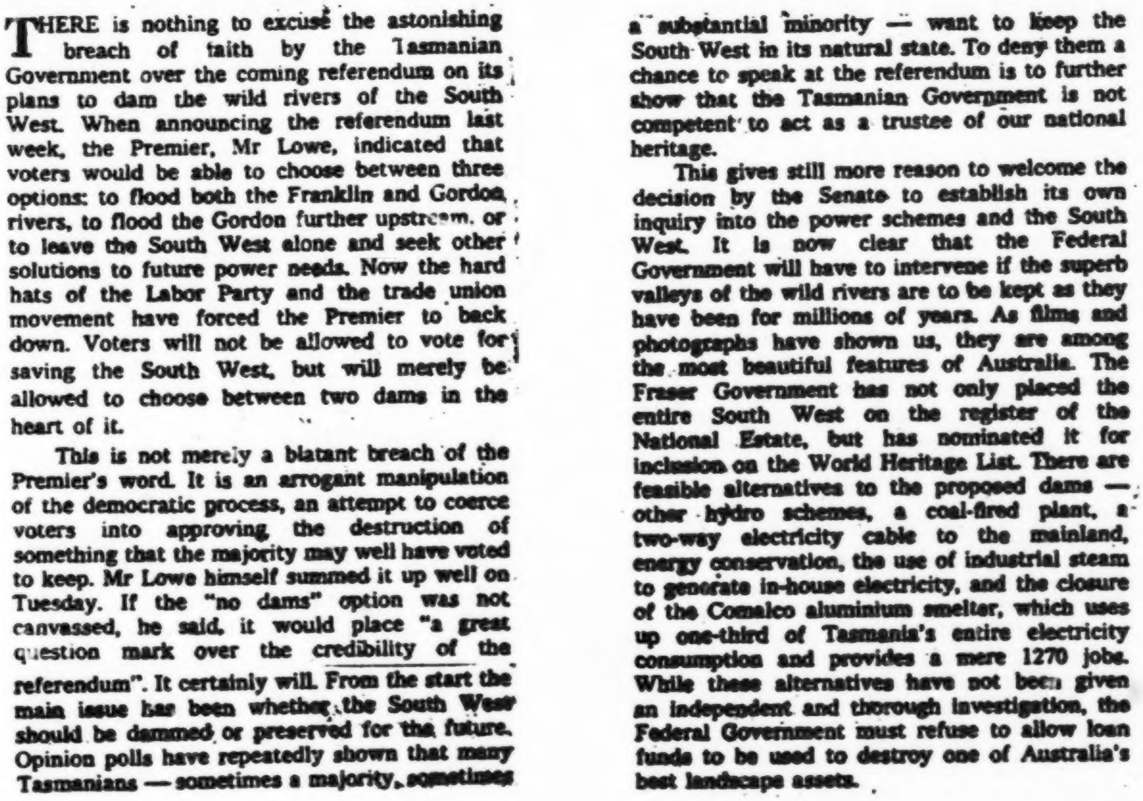
A hasty television poll when the referendum was announced last week showed 69 per cent of Tasmanians favored no dam at all in the south-west.

Editorial Assessment

Melbourne THE AGE in English 25 Sep 81 p 13

[Editorial]

[Text]



THERE is nothing to excuse the astonishing breach of faith by the Tasmanian Government over the coming referendum on its plans to dam the wild rivers of the South West. When announcing the referendum last week, the Premier, Mr Lowe, indicated that voters would be able to choose between three options: to flood both the Franklin and Gordon rivers, to flood the Gordon further upstream, or to leave the South West alone and seek other solutions to future power needs. Now the hard hats of the Labor Party and the trade union movement have forced the Premier to back down. Voters will not be allowed to vote for saving the South West, but will merely be allowed to choose between two dams in the heart of it.

This is not merely a blatant breach of the Premier's word. It is an arrogant manipulation of the democratic process, an attempt to coerce voters into approving the destruction of something that the majority may well have voted to keep. Mr Lowe himself summed it up well on Tuesday. If the "no dams" option was not canvassed, he said, it would place "a great question mark over the credibility of the referendum". It certainly will. From the start the main issue has been whether the South West should be dammed or preserved for the future. Opinion polls have repeatedly shown that many Tasmanians — sometimes a majority, sometimes a substantial minority — want to keep the South West in its natural state. To deny them a chance to speak at the referendum is to further show that the Tasmanian Government is not competent to act as a trustee of our national heritage.

This gives still more reason to welcome the decision by the Senate to establish its own inquiry into the power schemes and the South West. It is now clear that the Federal Government will have to intervene if the superb valleys of the wild rivers are to be kept as they have been for millions of years. As films and photographs have shown us, they are among the most beautiful features of Australia. The Fraser Government has not only placed the entire South West on the register of the National Estate, but has nominated it for inclusion on the World Heritage List. There are feasible alternatives to the proposed dams — other hydro schemes, a coal-fired plant, a two-way electricity cable to the mainland, energy conservation, the use of industrial steam to generate in-house electricity, and the closure of the Comalco aluminium smelter, which uses up one-third of Tasmania's entire electricity consumption and provides a mere 1270 jobs. While these alternatives have not been given an independent and thorough investigation, the Federal Government must refuse to allow loan funds to be used to destroy one of Australia's best landscape assets.

CSO: 5000/7505

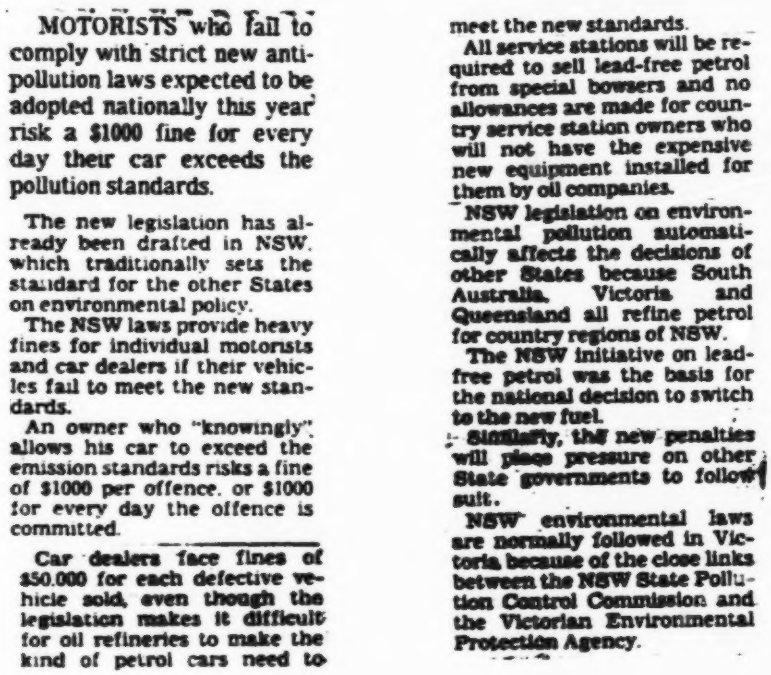
STIFF FINES TO BE LEVIED IN AUTO POLLUTION VIOLATIONS

NSW Draft Legislation

Canberra THE AUSTRALIAN in English 18 Sep 81 p 3

[Article by Nicholas Rothwell]

[Excerpts]



MOTORISTS who fail to comply with strict new anti-pollution laws expected to be adopted nationally this year risk a $1000 fine for every day their car exceeds the pollution standards.

The new legislation has already been drafted in NSW, which traditionally sets the standard for the other States on environmental policy.

The NSW laws provide heavy fines for individual motorists and car dealers if their vehicles fail to meet the new standards.

An owner who "knowingly" allows his car to exceed the emission standards risks a fine of $1000 per offence, or $1000 for every day the offence is committed.

Car dealers face fines of $50.000 for each defective vehicle sold, even though the legislation makes it difficult for oil refineries to make the kind of petrol cars need to meet the new standards.

All service stations will be required to sell lead-free petrol from special bowsers and no allowances are made for country service station owners who will not have the expensive new equipment installed for them by oil companies.

NSW legislation on environmental pollution automatically affects the decisions of other States because South Australia, Victoria and Queensland all refine petrol for country regions of NSW.

The NSW initiative on lead-free petrol was the basis for the national decision to switch to the new fuel.

Similarly, the new penalties will place pressure on other State governments to follow suit.

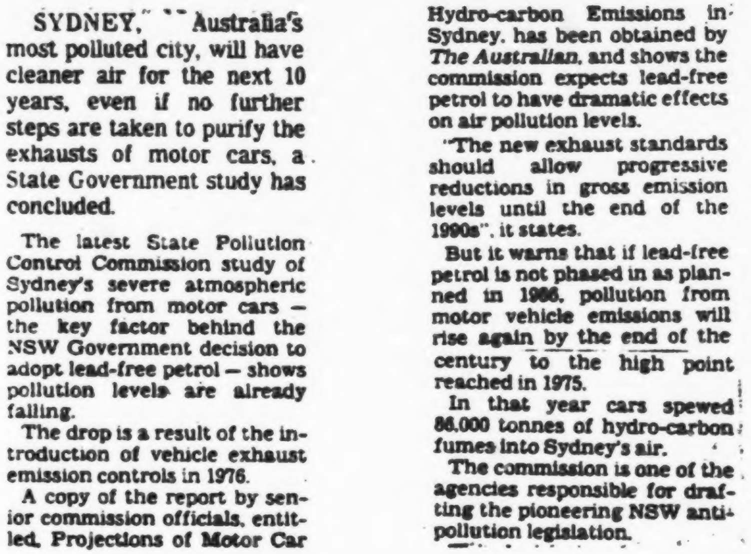
NSW environmental laws are normally followed in Victoria because of the close links between the NSW State Pollution Control Commission and the Victorian Environmental Protection Agency.

Sydney Air Quality

Canberra THE AUSTRALIAN in English 22 Sep 81 p 5

[Article by Nicholas Rothwell]

[Excerpt]



SYDNEY, — Australia's most polluted city, will have cleaner air for the next 10 years, even if no further steps are taken to purify the exhausts of motor cars, a State Government study has concluded.

The latest State Pollution Control Commission study of Sydney's severe atmospheric pollution from motor cars — the key factor behind the NSW Government decision to adopt lead-free petrol — shows pollution levels are already falling.

The drop is a result of the introduction of vehicle exhaust emission controls in 1976.

A copy of the report by senior commission officials, entitled, Projections of Motor Car Hydro-carbon Emissions in Sydney, has been obtained by *The Australian*, and shows the commission expects lead-free petrol to have dramatic effects on air pollution levels.

"The new exhaust standards should allow progressive reductions in gross emission levels until the end of the 1990s", it states.

But it warns that if lead-free petrol is not phased in as planned in 1986, pollution from motor vehicle emissions will rise again by the end of the century to the high point reached in 1975.

In that year cars spewed 86,000 tonnes of hydro-carbon fumes into Sydney's air.

The commission is one of the agencies responsible for drafting the pioneering NSW anti-pollution legislation.

CSO: 5000/7505

BRIEFS

COMPUTER CHECK OF WASTE--EMI Electronics has installed a Data General NOVA 4X minicomputer to monitor wastes from a gas turbine power station in the Latrobe Valley. The computer, part of a $200,000 system at the Jeeralang power station, will sound an alarm if emission levels are exceeded. The alarm system was developed by EMI under a grant from the Industrial Research and Development Incentives Board. The SEC ordered the system to meet the requirement of the Environment Protection Authority. Under EPA regulations, industrial plants which discharge waste into the atmosphere must be licensed. The new computer installation will monitor waste gases every 30 seconds and transfer the figures to a data base which compares the results with predetermined safety levels. If the limit is exceeded, an alarm alerts the operator to take the appropriate corrective action. The equipment includes the NOVA 4X, two printers, a 12.5 megabyte fixed disc, a magnetic tape and the EMI microcomputer scanner substation. [Text] [Melbourne THE AGE in English 8 Sep 81 p 39]

PESTICIDES IN TEA--Canberra--A Queensland Government survey had found pesticides not allowed under food and drug regulations in some brands of blended tea, the Federal Health Minister, Mr MacKellar, said yesterday. The pesticides discovered included aldrin, dieldrin and DDT. A Queensland Labor backbencher, Elaine Darling, asked Mr MacKellar in Parliament whether the survey had been referred to the National Health and Medical Research Council's subcommittee on pesticides. Mr MacKellar said the matter had been referred to the subcommittee which was of the opinion that the pesticide levels detected were low. "The results of the analyses carried out by the Queensland Government Chemical Laboratory revealed the presence of some organochlorine compounds," he said. "The survey has disclosed other pesticides not allowed under food and drug regulations." Disclosure of the names of the teas was a matter for the State authorities, he said. [Text] [Perth THE WEST AUSTRALIAN in English 9 Sep 81 p 73]

VICTORIA CONSERVATION BUDGET--Funds for conservation have been cut in real terms, with an increase of only 3.7 percent on the last financial year. The total funds available to the Ministry of Conservation for 1981-82 will be $37.3 million. The largest single items are $6.5 million for salaries, administrative expenses and minor grants; $4.9 million to the National Parks Fund and $7.1 million to the Environment Protection Authority and its delegated agencies. The Soil Conservation Authority receives $4 million in the Budget, up on its $3.6 million for the past financial year. But Fisheries and Wildlife receives less--down to $4.2 million from $4.8 million. The Ministry's works and services programme is also down: from $8.3 million to $8.1 million.

The Conservation Council of Victoria has attacked the Government's financing of conservation, saying that without money to carry them out Government policies become window dressing. The council's director, Mr Geoff Wescott, said the Government was increasing the areas of national park to be managed but was not providing more staff to manage them. The Government put on a "front" of concern, but in fact conservation was a low priority, he said. [Text] [Melbourne THE AGE in English 17 Sep 81 p 17]

FRANKLIN DAM REFERENDUM--Hobart--Tasmania is to hold a referendum to settle the parliamentary deadlock over power schemes affecting the Franklin River wilderness area. The State Liberal Opposition immediately announced it would oppose the referendum. The Tasmanian Wilderness Society said it would mount the biggest campaign in Australia's conservation history to ensure a fair question and an informed vote. The Premier, Mr Lowe, announced the referendum yesterday after a 2-1/2 hour Caucus meeting. The Government and the Upper House have been deadlocked since last December when the Legislative Council voted in favour of a scheme which would have destroyed more of the wilderness area than an alternative, more costly scheme supported by the Government. [Text] [Sydney THE SYDNEY MORNING HERALD in English 17 Sep 81 p 3]

2,4,5-T EXONERATION--New agricultural studies have suggested that the toxic herbicide 2,4,5-T does not remain in the soil after it has been sprayed on plants. The findings of a special research team set up by the NSW Department of Agriculture showed that the chemical spraying of large areas of national parks had not resulted in the pollution of rivers, and so would be unlikely to affect humans by accident. The use of 2,4,5-T as a weed-controlling herbicide has been the centre of controversy ever since the substance was used in Vietnam as an ingredient of the defoliant Agent Orange. But the substance is used by the National Parks and Wildlife Service only in recommended low concentrations, as a means of controlling scottish broom in the Barrington Tops National Park in NSW. Tests carried out by experts from the Biological and Chemical Research Institute at spray sites showed that 18ha of nearby drainage areas which were dosed with a total of 35,000 litres of diluted 2,4,5-T, showed little pollution only two weeks after being sprayed. [Text] [Canberra THE AUSTRALIAN in English 18 Sep 81 p 2]

UNION DEVELOPMENT BOYCOTT--Plumbers threatened yesterday to impose their own quality controls over what they said was the "development disaster on the Gold Coast." The powerful Plumbers and Gasfitters Union said it would monitor all future development to ensure that companies and principals were not "rip-off merchants" and that environmental concerns--such as shadows cast over beaches by buildings--were not ignored. The State secretary of the union, Mr Tom Bourke, said yesterday: "The time has come for the union movement to show a sense of responsibility over the development disaster on the Gold Coast." Without the services of plumbers, through their official union, there is no chance of developments going ahead. Mr Bourke said: "We do not want, in any sense, to hold up important building work, but we must draw the line at buildings controlled by corporate crooks, who are merely dealing in funny money to make a fast buck. "They are responsible for the so-called real estate boom that makes it impossible for young couples to raise the finance for a first home. "Much of the development on the Gold Coast is insane, both financially and environmentally. "The place already looks like a huge multi-million-dollar slum, with buildings going up everywhere. "As responsible unionists we cannot allow this to continue, and will monitor every single job with extreme care from now on." [Text] [Canberra THE AUSTRALIAN in English 18 Sep 81 p 3]

OIL WASTE POLLUTION--Canberra--The use of large quantities of waste oil to settle dust in the Puckapunyal military area north of Melbourne has been criticised by a parliamentary committee. The standing committee on public works said in a report tabled last week that the annual use of 20,000 litres of waste oil for this purpose was "a pollution problem of some magnitude." The report, on the proposed $12 million redevelopment of the Armored Corps centre at Puckapunyal, said it was unreasonable that an environmental approval had been issued in 1977, when the project was only in "embryo" form. The committee recommended that the Defence Department, in conjunction with the Department of Home Affairs and Environment, review disposal methods "for all pollutant substances throughout Australia" to ensure they were in line with Federal, State and local laws. It also was concerned that the proposed improvements to tank hangars at Puckapunyal could result in waste water being channelled into the stormwater system. "The addition of one or two grease traps at a capital cost of approximately $500 each would minimise any potential pollution dangers. Again the responsible authorities have exhibited concern," the report said. The waste oil is laid under the muzzles of guns to prevent dust obscuring the view of training gunners. The armored Corps centre's commanding officer, Lieutenant Colonel R.E. Bowd, said yesterday that water was not suitable for the job. The committee said the problem would be rectified by a recycling plant provided for in the redevelopment proposal, but this might not be in use until 1984. [Text] [Melbourne THE AGE in English 22 Sep 81 p 5]

CSO: 5000/7506

CONSERVATIONISTS WIN VICTORY IN NATIVE FOREST PROTECTION

Auckland NEW ZEALAND HERALD in English 25 Sep 81 p 1

[Text] Conservationists yesterday won an 11th-hour victory they rated as the most significant in eight years of fighting for native forest protection.

The Government announced it would include the South Okarito and Waikukupa state forests in the Westland National Park.

The Minister of Forests, Mr V. S. Young, conceded that the decision was largely attributable to pressure from the conservation lobby.

Tributes

The director of a joint campaign on native forests, Mr Guy Salmon, described it as "tremendous news for conservation . . . something we have been working for years and years."

Mr Young had agreed that an expanded national park was not in Government plans earlier this week.

Mr Salmon said he believed the policy was changed during a Government caucus meeting yesterday, although other sources said the decision was taken on Tuesday.

Mr Salmon paid tribute to the efforts of the Minister of the Environment, Dr Shearer, in helping to modify the Government's intention.

But it was clear yesterday that the conservationists, who took a full-page advertisement in a Wellington newspaper yesterday — were instrumental in effecting the change.

Exotics

Mr Young said it was due to the widespread support for the campaign run by the Native Forests Action Council and the Royal Forest and Bird Protection Society, as well as the Government's desire for a balanced forestry policy.

Outlining plans described by conservationists as a "quid pro quo" compromise, Mr Young said it was intended to establish an exotic forest in South Westland of up to 10,000 hectares.

This would provide for long-term sawmilling and create jobs. The logging area contained no virgin native forest and all other forests around would be subject to a logging moratorium until 1990.

The new exotic forest would be planted in pine at first as a "bread and butter" crop, with other species introduced later.

Long Push

The exact boundaries of the two forests to be added to the Westland National Park would be decided in consultation with the Westland National Parks and Reserves Board, said Mr Young. If there were any infringements on native timber stands, they would be minimal.

Yesterday's decisions were agreed unanimously by the Government caucus, he said.

Dr Shearer said that for many years, conservationists had been advocating a "mountains - to - the - sea" native forest concept for the region.

"The decision today means that that concept has been achieved," he said.

Surprised

It was particularly pleasing that sawmilling communities could be maintained from areas of already quite badly damaged forests and that nine years of scientific study could now begin in the moratorium area.

Mr Young and Dr Shearer would not be drawn on whether there had been any disagreement between them over the issue but both said the value of having the lands and environment portfolios held by separate ministers had been demonstrated.

Mr Salmon said it had been a tough fight to achieve yesterday's result — "the toughest in the last eight years."

"My feeling was that we were going to lose, and I was pretty surprised by the way it turned out."

He said the decision was "a reaffirmation of democracy" which reflected great credit on the 3000 people who had supported the campaign with submissions to the Government.

CSO: 5000/9048

FARMERS DEMAND NEW STUDY ON PROPOSED FORESTRY PORT

Auckland NEW ZEALAND HERALD in English 17 Sep 81 p 8

[Excerpt]

Kaikohe

Farming leaders in Northland want an independent report made on plans for a foresty port in the North.

The presidents of the Whangarei and Bay of Islands subprovinces of Federated Farmers, Mr Andrew Priest and Mr Bruce Tolich, says the Northland United Council should make its own evaluation of the northland forestry port study and the environmental impact audit on it.

They say the council should ask the Development Finance Corporation to help in the re-appraisal.

The environmental impact audit, say Mr Priest and Mr Tolich, reflects the opinion of many Northlanders.

Badly Timed

"We welcome the suggestion that further studies be made," Mr Priest said.

"Farmers — as one body of people most likely to be affected by a badly timed or uneconomic port development — need further evidence to show the true situation with forestry and a forest port in Northland.

"We are very concerned at the minimal stumpage returns likely to be available to farmers and the audit report findings have done nothing to allay these fears."

The forestry port study recommended Marsden Pt as the outlet for Northland forest products.

CSO: 5000/9048

MINING LOBBY CONSIDERS MINING AMENDMENT BILL UNWORKABLE

Imposes Exploration Curbs

Christchurch PRESS in English 10 Sep 81 p 20

[Text]

Parliamentary reporter

New Zealand's biggest mining lobby consider the Mining Amendment Bill now before Parliament to be extremely cumbersome, if not entirely unworkable.

The Mineral Exploration Association, which accounts for 95 per cent of exploration spending in the country, has told the Commerce and Energy Select Committee that the bill in in direct contravention to the original purpose of the Mining Act. The stated purpose of the 1971 act is "to provide improved facilities for the development of mineral resources."

According to the association's president, Mr J. Lawrey, the amendments being considered appear to be designed to impose curbs on those seeking to explore and prospect.

"In endeavouring to provide a balance between conservation and development, the interests of the mineral industry have been subordinated to a degree which is in direct contravention to the avowed purpose of the act," he said.

The association submitted that an additional licence should be inserted into the licencing procedure.

Under the association's proposal, the procedure would be:

- First stage: an exploration licence, which would be under the same terms as proposed by the bill;
- Second stage: a prospecting licence, the main features of which would be grant by existing departmental processes with minimum fuss and delay, and with no provision for public hearing or objection. The licence would be available only for prospecting involving mineral impact on the environment;
- A new third stage: an evaluation licence. This would be required when environmental disturbance is envisaged. It would be open to objections and Planning Tribunal hearings. At this stage, too, a decision would be taken in principle to whether mining should take place; and
- Fourth stage: a mining licence. This would apply where an economic discovery was made. There would be provision for objections and hearings to influence the setting of conditions for mining.

Mr Lawrey said that the proposal would meet one of the main objections to the procedures existing under the act.

"This is the concern at the lack of detailed information as to possible mining available at the time of objection to a prospecting licence. We understand this concern," he said.

"The simple fact is that rarely, if ever, is a prospecting licence applicant in any position to state what might be mined, in what quantities, over what duration, by what methods, and what environmental impact this may have."

"At our proposed evaluation licence stage, much of this information will continue to be speculative, but the information available will be of better quality and more reliable than the information presently available.

"In other words, the community and the environmental interests will be better informed," Mr Lawrey said.

The association submitted that for every 1000 prospects considered, perhaps 100 would be examined on the ground, 10 drilled, and one brought into production (or at least made the subject of a detailed feasibility study).

"The major concern of the mineral mining industry today is that New Zealanders seem to be losing sight of the economic contribution mining has made. There seems to be little appreciation of the potential the industry holds for renewed development at a time when the country desperately needs growth," the association said.

A 100ha dairy farm would take 750 years to gross as much revenue as the same area devoted to big hard-rock gold mining would in one year, it said.

At the end of the 15-year life of the mine, the land would be restored for alternative use such as recreation, forestry, or agriculture.

The total land area affected by mining in New Zealand was 240ha, the association said. The extent to which mineral mining could benefit New Zealand was speculative until results began to emerge from the present prospecting programme, but confirmed and proposed mining developments were expected to involve expenditure of $200 million over the next five years. Export revenue could total $200 million a year for 15 years or more.

Mineral companies in New Zealand would spend about $9 million this, of which 80 per cent would come from overseas and 20 per cent from local resources.

Total staff employed in exploration was about 110, of whom 103 were New Zealanders, and more part-time staff were employed during the peak season.

The number of people involved in servicing the exploration and mine development, either directly or indirectly was about 500, the association said.

Mining companies in New Zealand had fully accepted a responsibility for land restoration, even though the amount of land involved was miniscule, and built the cost for this into their studies.

Fear Based on Ignorance

Auckland NEW ZEALAND HERALD in English 20 Aug 81 p 3

[Text]

Thames

The project manager for a prospecting firm says ignorance is responsible for the widespread fear of the effects mining has on the environment.

Ignorance of the role mining now played in the economy was considerable, both in public and Government circles, the project manager for Amax Exploration of NZ, Mr Michael Baker, told delegates at the annual conference of the New Zealand branch of the Australasian Institute of Mining and Metallurgy yesterday.

"This lack of knowledge of modern mining has been responsible for a fairly widespread fear of the effects of mining on the physical and social environment," he said.

"This fear has been played on by some political activists who have not hesitated to make the most outrageous and often untrue statement to cloud and inflame the issue."

Such activists had "tended to move into prominent positions in moderate conservationist and environmental groups."

Mr Baker said that with new legislation to alleviate public fears over mining, "some of the more radical anti-miners" had begun to "change horses, with the next charge now appearing as an attack on the multinationals."

Mr Baker said New Zealand had to choose beween sacrificing for a time "a very minor part of the green scenery" for some new industrial enterprise, or joining the ranks of the alternative lifestyle proponents.

He asked whether a more simple lifestyle was a real alternative. Alternative lifestyle people were not as independent as they thought and still needed a wider world for their survival.

Mining could not solve New Zealand's problems, he said, but the contribution of foreign exchange earnings from future gold and silver mining could be as much as $200 million—without any subsidies being required.

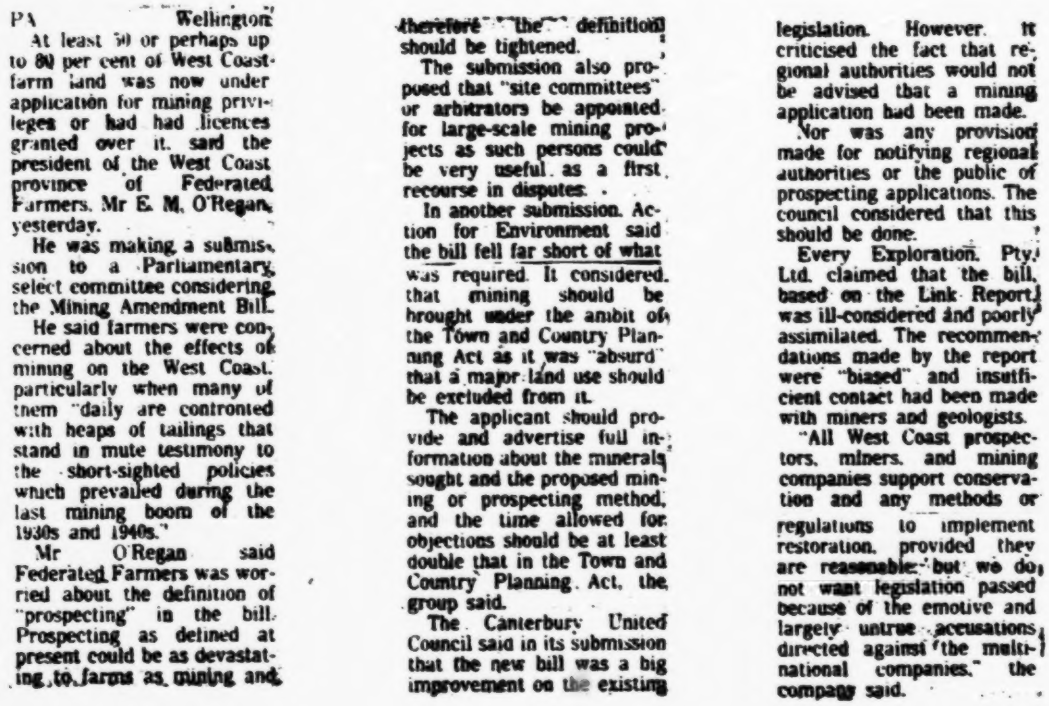
The trade-off for large-scale hard rock mining might be a maximum land use of 1000 hectares. Eighty per cent of this land could be rehabilitated fully and the remainder in varying degrees.

"The requirement today is for full environmental safeguards," he said. "No longer are the mining companies able to take a cheap option."

West Coast Farmers' Fears

Christchurch PRESS in English 10 Sep 81 p 1

[Text]



PA Wellington

At least 50 or perhaps up to 80 per cent of West Coast farm land was now under application for mining privileges or had had licences granted over it, said the president of the West Coast province of Federated Farmers, Mr E. M. O'Regan, yesterday.

He was making a submission to a Parliamentary select committee considering the Mining Amendment Bill.

He said farmers were concerned about the effects of mining on the West Coast, particularly when many of them "daily are confronted with heaps of tailings that stand in mute testimony to the short-sighted policies which prevailed during the last mining boom of the 1930s and 1940s."

Mr O'Regan said Federated Farmers was worried about the definition of "prospecting" in the bill. Prospecting as defined at present could be as devastating to farms as mining and therefore the definition should be tightened.

The submission also proposed that "site committees" or arbitrators be appointed for large-scale mining projects as such persons could be very useful as a first recourse in disputes.

In another submission, Action for Environment said the bill fell far short of what was required. It considered that mining should be brought under the ambit of the Town and Country Planning Act as it was "absurd" that a major land use should be excluded from it.

The applicant should provide and advertise full information about the minerals sought and the proposed mining or prospecting method, and the time allowed for objections should be at least double that in the Town and Country Planning Act, the group said.

The Canterbury United Council said in its submission that the new bill was a big improvement on the existing legislation. However, it criticised the fact that regional authorities would not be advised that a mining application had been made.

Nor was any provision made for notifying regional authorities or the public of prospecting applications. The council considered that this should be done.

Every Exploration. Pty. Ltd. claimed that the bill, based on the Link Report, was ill-considered and poorly assimilated. The recommendations made by the report were "biased" and insufficient contact had been made with miners and geologists.

"All West Coast prospectors, miners, and mining companies support conservation and any methods or regulations to implement restoration, provided they are reasonable; but we do not want legislation passed because of the emotive and largely untrue accusations directed against the multinational companies," the company said.

CSO: 5000/9048

SOCIAL CREDIT POLICY ON MINING APPLICATIONS ANNOUNCED

Auckland NEW ZEALAND HERALD in English 25 Sep 81 p 16

[Text]

Wellington

Social Credit says it would legislate to ensure that protection of the environment was the first priority when mining applications were considered.

In a policy statement the league says it would secure ownership of all minerals to the Crown and establish a Government-funded Minerals Corporation to carry out exploration, delineation and assay.

Proven opportunities would be developed by public mining companies, structured by agreement with the corporation.

"Although the export of minerals in the raw state occasionally appears attractive. Social Credit will continue to press the advantages of retaining them for our own use as and when we require them."

Social Credit would establish a mining court in conjunction with the Planning Tribunal to deal with applications to prospect and mine. Applications would be heard in the districts to which they related.

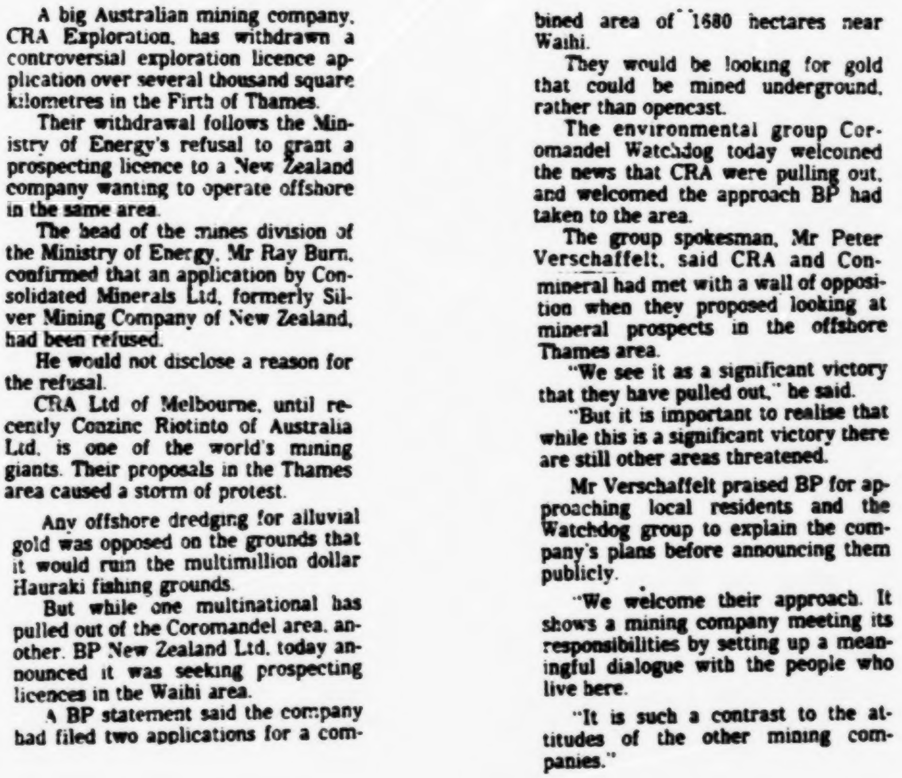
Mining rights would not be let to foreign interests unless it could be conclusively proved to be of advantage to New Zealand.

CSO: 5000/9048

MINING COMPANY WITHDRAWS OFFSHORE EXPLORATION LICENSE

Wellington EVENING POST in English 24 Aug 81 p 4

[Text]



A big Australian mining company, CRA Exploration, has withdrawn a controversial exploration licence application over several thousand square kilometres in the Firth of Thames.

Their withdrawal follows the Ministry of Energy's refusal to grant a prospecting licence to a New Zealand company wanting to operate offshore in the same area.

The head of the mines division of the Ministry of Energy, Mr Ray Burn, confirmed that an application by Consolidated Minerals Ltd, formerly Silver Mining Company of New Zealand, had been refused.

He would not disclose a reason for the refusal.

CRA Ltd of Melbourne, until recently Conzinc Riotinto of Australia Ltd, is one of the world's mining giants. Their proposals in the Thames area caused a storm of protest.

Any offshore dredging for alluvial gold was opposed on the grounds that it would ruin the multimillion dollar Hauraki fishing grounds.

But while one multinational has pulled out of the Coromandel area, another, BP New Zealand Ltd, today announced it was seeking prospecting licences in the Waihi area.

A BP statement said the company had filed two applications for a combined area of 1680 hectares near Waihi.

They would be looking for gold that could be mined underground, rather than opencast.

The environmental group Coromandel Watchdog today welcomed the news that CRA were pulling out, and welcomed the approach BP had taken to the area.

The group spokesman, Mr Peter Verschaffelt, said CRA and Conmineral had met with a wall of opposition when they proposed looking at mineral prospects in the offshore Thames area.

"We see it as a significant victory that they have pulled out," he said.

"But it is important to realise that while this is a significant victory there are still other areas threatened.

Mr Verschaffelt praised BP for approaching local residents and the Watchdog group to explain the company's plans before announcing them publicly.

"We welcome their approach. It shows a mining company meeting its responsibilities by setting up a meaningful dialogue with the people who live here.

"It is such a contrast to the attitudes of the other mining companies."

CSO: 5000/9048

ENVIRONMENTAL SOCIETY FIGHTS ALUMINUM SMELTER REPORT

Wellington EVENING POST in English 1 Oct 81 p 4

[Text]

The environmental impact report on the Aramoana aluminium smelter was challenged in the Court of Appeal today.

The Environmental Defence Society is seeking a declaration by the court that the report is inadequate and should be declared a nullity.

Two separate actions, under the National Development Act and under the Judicature Act, are being pursued in a bid for a declaration.

The court comprises the President, Sir Owen Woodhouse, Mr Justice Cooke, Mr Justice Richardson and Mr Justice McMullin.

Mr P M Salmon is appearing for the plaintiff society, Mr E W Thomas, QC, for South Pacific Aluminium Limited (first defendant) and the Otago Harbour Board (second defendant), Mr R J Somerville, with him Mrs S Kenderdine, for the commissioner for the environment, Mr Kenneth William Piddington (third defendant) and Mr K Robinson for the Planning Tribunal (fourth defendant).

The purpose of the litigation was to define what was meant by an environmental impact report as prescribed in the National Development Act, Mr Salmon said in his submissions.

The Act contained no words limiting the phrase "environmental impact report" and the courts should not limit.

The plaintiff claimed that the report should extend to the secondary effects of the smelter, in particular the implications of the demand for electricity by the smelter in terms of the necessity for the construction of further electricity generating works.

It was admitted that the report did not address itself to the question of electricity supply and was generally limited to "site specific" matters, Mr Salmon said.

In a project of the magnitude of the smelter, broad national environmental issues were highly relevant and the report should be extended to include additional pressures, on energy resources.

They should be examined in the report even if only in a general sense, counsel said.

Mr Salmon said the defendants' answers had been three-fold.

They claimed that the commissioner need do no more than had been done, that other environmental impact reports prepared under the National Development Act procedures had not dealt with secondary impact or national matters, and that there was no definable connection between the smelter and the Clutha electricity scheme.

The plain words of the statute did not exclude indirect impacts, Mr Salmon said.

The term environment was wide enough to cover all matters that impinged on a particular proposal, he said.

CSO: 5000/9048

PROPOSED OIL PIPELINE SEEN THREATENING SAND DUNE EROSION

Auckland NEW ZEALAND HERALD in English 21 Aug 81 p 8

[Text] Whangarei--The Northland Harbour Board is worried that a proposed oil pipeline could accelerate sand dune erosion at the Whangarei Harbour entrance.

The board yesterday considered the NZ Refining Company's environment report on the pipeline and decided to send its comments to the Ministry of Energy.

The board was told by its harbour engineer, Mr Colin Squires, that the company intended taking the pipe across the foreshore, from south of Ruakaka to Waipu.

The report claimed the ecological effect would be small and anticipated no problems, Mr Squires said.

Extreme Caution

"But sand dunes are notoriously unstable," he said, "and any development in or among the foredunes should be undertaken with extreme caution.

"It would appear that the sand dune option has been taken to minimise damage to farmland.

"Unfortunately, sand dunes are significantly more sensitive to environmental damage and greater attention should be given to this matter.

The board also considered the risk of oil spills from breaks in the pipeline.

The report did not consider a method of cleaning spilled material, Mr Squires said.

He told the board that the pipeline would, in 1985, divert between 560,000 tonnes and 770,000 tonnes away from the board's coastal tanker trade.

Fewer Tankers

That would result in 21 to 29 fewer coastal tankers calling at Marsden Pt and revenue could be reduced by as much as $731,000.

But more cargo would come across the refinery wharves, particularly if synthetic gasoline from Taranaki was shipped to Marsden Pt for blending.

CSO: 5000/9048

BRIEFS

DETERMINATION OF VANADIUM IN WATER--This paper reports a study on the condition for using BPHA for extracting and concentrating vanadium with the high temperature graphite furnace atomic absorption method. Ordinary ion exchange and solvent extraction methods have been reported by others. Ishizaki et al (TALANTA Vol 26 (1980) p 523) discussed the use of BPHA and its derivatives but concluded that they cannot be used to extract vanadium of the mμg level. In view of the fact that BPHA is easily available, the authors carried out this experiment. They found BPHA extraction to be satisfactory in determining the vanadium content in water, waste water, and sea water to the level of 10^{-7} to 10^{-4} g of vanadium per liter of water. Effects of water acidity, BPHA density, and other conditions are discussed. [Summary] [Beijing HUANGJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 1-3] 6248

DETERMINATION OF COBALT IN SOIL--The use of the high temperature graphite furnace atomic absorption method to determine cobalt in soil has been reported before, but extraction is required to improve sensitivity and reduce interference. The use of heat decomposition graphite painted graphite tube can improve sensitivity but its use in determining cobalt has not yet been reported. The authors used the WFD-Y3 atomic absorption spectrometer, a WFX-1 graphite furnace, and a LZ3-100 function recorder to carry out the experiment. Nitric acid and hydrofluoric acid are used to break down and sulfuric acid to smoke the specimen. Lanthanum, calcium, and ascorbic acid are used to eliminate interference, and a deuteron lamp to minimize background absorption to determine cobalt in soil. Results are reported. [Summary] [Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 4-7] 6248

IDENTIFICATION OF BENO(K) FLUORATHENE--Published literature of the past two decades indicates that BkF is an important element of polyaromatic hydrocarbons (PAH) in the atmospheric dust particles, and is also one of the six PAH to be tested in drinking water. Isomers of BkF, including BaP, BbF, and BeP have different carcinogenic action; due to their close chemical property, mutual interference exists during analysis. Its isolation (and identification among the four chemicals) is, therefore, an important and difficult subject in PAH analysis work. This paper reports the work of analyzing the dust and water samples of a certain coking plant in Beijing to isolate and identify 15 major PAH. Most recently synthesized domestic GC-MS and paper chromatographic-fluorimetric method are used. The analysis procedure and result are reported. [Summary] [Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 7-10] 6248

DIPHENOL ETHER POLLUTION IN SOIL--In south China, mud from the bottom of streams and rivers is regularly dredged and used as fertilizer and through this type of mud the pollutants discharged by some chemical plants enter the fields. Diphenol ether has been rather extensively used in China mainly as a heat carrier. In April 1977, in a certain area of Suzhou, 7,500 tons of mud from the canal was used to make a compost and applied in rice paddies. Soon afterwards, seedlings died in massive numbers, and earthworms, eels, etc. which are highly pollutant-resistant, completely disappeared from these paddies. Workers who had had contact with the mud developed a series of symptoms. An analysis disclosed the fact that the mud was highly contaminated by diphenol ether. This paper reports a preliminary study on the duration of retention of diphenol ether in soil and its effects on rice and wheat. Results indicate that the maximum tolerance of the chemical by rice is 25ppm, and 200ppm for wheat. Its retention in soil is about 3 months. [Summary] [Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 18-21] 6248

ORGANIC ARSENATES--In provinces of Jiangsu, Zhejiang, Fujian, Taiwan, etc. zinc methylarsonate (Daojiaoqing) and calcium methylarsonate are frequently and extensively used to control sheath and culm blight of rice (Pellicularia sasakii (shirai) Ito). These insecticides are easily made, highly effective, and very inexpensive, but whether or not they will cause pollution of rice paddies is a problem of extreme concern for many people and opinions vary a great deal on the subject. In the past few years the authors have been studying their distribution in soils and their traces and residues in rice grain. Samples are taken from 10 counties of Zhejiang Province. A comparison of early rice seeds and harvested rice seeds indicates that the residual arsenic content is less than the permissible standard of the state. There is no obvious conclusion regarding their contamination of soil. Continued observation is deemed necessary. [Summary] [Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 29-32] 6248

ATMOSPHERIC FLUORO-CONTAMINANTS--Four vegetable-producing areas in the vicinity of the main source of fluoride contaminants are selected for sample study and specimens of two areas, 65 km and 31 km respectively from Baotou Steel and Iron Company, which is the source of fluoride pollution, are used as the control. Results of the study demonstrate that atmospheric fluorides can cause the fluorine content of vegetables to increase but the effect of fluoride-containing irrigation water is less obvious. The fluorine content of vegetables is the highest in the leaves and the lowest in the fruits, and the fluorine content of vegetables is water soluble. Soaking vegetables in water may cause the fluorine content to be reduced considerably. [Summary] [Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 41-44] 6248

CHLORINATED PESTICIDE--Although gas chromatography has often been used in the analysis of chlorinated pesticide contents in water, some problems remain unresolved. The pesticide content of a water specimen is usually very low and concentration is necessary beforehand. Generally, either an absorbing agent or funnel extraction is adopted for concentration and both are complex and time consuming. Since the bonded-phase technique was proposed by W.Aue in 1973 J. CHROMATOGR. Vol 77 (1974) p 299) this new stationary phase has attracted increasing attention. This paper reports an experiment testing this technique.

After 405 support body is bonded to Carbowax 20 M, the SE-30 stationary phase is smeared on and used to analyze the organic chlorine insecticide content of water. Results indicate that when this bonded-phase is combined with an electron capture detector, 0.005 ppb of insecticide (para α-BHC) in water may be identified. [Summary] [Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 46-50] 6248

HILBERT SPACE THEORY--This paper reports an attempt of applying the Hilbert space theory for a vector analysis mathematical model to derive an index of comprehensive environmental pollution. This model is compared with other models, such as the N.L. Nemerow model, to prove that this model can clearly reflect the contribution of each pollutant and determine the compound action of all pollutants. A sample environment is given to explain that although the content of each pollutant does not exceed the permissible standard by itself, the compound result does exceed the limit allowable and in an environment such as this fish will die. [Summary] [Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 57-60, 79] 6248

CSO: 5000/4002

DEFORESTATION ACCELERATES, PROCESS TO BE COMPLETE IN 12 YEARS

Bangkok THE NATION REVIEW in English 2 Oct 81 p 5

[Article by Thaung Mying]

[Text] IN ANOTHER 12 years Thailand's forests, which covered 60 per cent of the country 20 years ago, will have disappeared, leaving a barren wasteland, according to forestry officials.

Indiscriminate felling of timber in the last two decades has raised the spectre of a land, once thickly carpeted by jungle, being turned into a treeless wilderness well before the end of the century.

Forests of teak and other hardwoods now cover only 120,000 square kilometres (46,300 square miles) of Thailand's total land area of 520,000 square kilometres (200,000 square miles), officials say.

And they warn that if the current rate of depletion – 10,000 square kilometres (3,800 square miles) a year – continues every tree in Thailand will have gone by 1993.

That is a conservative estimate, according to Professor Prapasri Sirichanya of Chulalongkorn University, who believes the rate of forest destruction is far higher and says Thailand's trees will have disappeared within six years.

ECONOMIC REPERCUSSIONS

THE professor who specializes in natural resources said the calamity would have far-reaching economic repercussions.

"The entire economy can be disrupted, with droughts, floods and aridity the order of the day," she warned.

Thailand had a foretaste of Professor Prapasri's warning in 1979 when it was hit by the worst drought in 30 years. The drought was not broken until last year.

Major crops such as rice and sugarcane shrivelled. Agricultural exports plummeted. Water behind hydroelectric and other major dams fell and electricity and farm water supplies were endangered.

The problems, compounded by rising costs of imported Middle East oil, led to widespread discontent and the fall of General Kriangsak Chomonan's three year-old government early in 1980.

Denudation of the forests began barely 20 years ago. An aerial survey in 1960 by the Royal Forestry Department showed 60 per cent of Thailand still covered by trees.

Another survey 17 years later revealed the forests had shrunk to only 38 per cent of the total land area.

ILLEGAL LOGGING

OFFICIALS and experts blame the loss of the forests on illegal logging, pressure of the population on land and the country's unbalanced economic development.

Illegal lumbering and trespass by land-hungry farmers and three million people of hill tribes practising wasteful slash-and-burn cultivation are responsible for destruction of 60 per cent of the forests, they say.

Forests became so depleted that teak production fell sharply from 359,000 cubic metres (12,678,000 cubic feet) in 1954 to 139,000 cubic metres (4,900,000 cubic feet) in 1976. In the following year the government banned all teak exports in an attempt to halt illegal logging.

The ban was partially lifted later to allow export of teak conversions – teak boards and planks. But production from the remaining forests was so small that teak and other timber exports last year fell to just over 2,000 cubic metres (72,000 cubic feet).

REAFFORESTATION PLANS

THE Thai Government has now announced a plan to restore the forests on 250,000 square kilometres (96,500 square miles), or nearly half of Thailand, through various measures.

The reafforestation plans involve replanting of trees by the Royal Forestry Department, the state-owned forestry industry organization, and private companies holding forest concessions.

Areas planted with trees would be divided into protective and productive forests. Lumbering would be banned from protective forests covering watersheds and housing national parks while wood for economic use would be made available only from productive forests.

But, doubts have been expressed by both officials and conservationists whether the government can implement its plan.

They say that reafforestation plans in the past did not work simply because the government lacked the manpower to tend to tree saplings which fall victim to destructive weed and grass.

And the government seems reluctant to resort to wholesale eviction of hundreds of thousands of families settled in reserved forests, fearing they might join an estimated 10,000 communist guerrillas operating in the jungles and hills.

Forestry and police departments have so far been unable to suppress large-scale illegal logging operations by economically influential groups using bulldozers and protected by hired gunmen.

CSO: 5000/4504

BRIEFS

NATURAL RESOURCES RESEARCH--San Salvador, 30 Sep (ACAN-EFE)--The Salvadoran Government has spent $24 million on renewable and nonrenewable natural resource research in 1981. The program includes reforestation, technical assistance, determination of present usage and potential of soils, development of national parks and the diminishing of contamination level in waters. The program is intended to improve the use, development and conservation of natural resources in order to contribute to the nation's economic and social progress, official sources explained. [Panama City ACAN in Spanish 1945 GMT 30 Sep 81 PA]

CSO: 5000/2011

COUNTRY MAY DO OWN TESTING OF U.S.-MADE CHEMICALS

Helsinki HELSINGIN SANOMAT in Finnish 24 Sep 81 p 13

[Article by Seija Sartti: "Sales Permits To Control Substances Will Be Subjected to Reconsideration"]

[Text] How many of Finland's 300 pesticides and herbicides are being marketed as a result of questionable laboratory testing or fraudulent research is at this time a complete mystery. In order to clarify this matter, officials would have to go through 10--30 studies on each substance.

Somewhere the time, money, and expertise must be found for reading perhaps hundreds of thousands of pages at the worst. No small country can afford to test these substances by conducting expensive toxicity tests again, tests that can take many years.

Trust must be placed in foreign studies -- in spite of the fact that the manufacturers of pesticides and herbicides conduct the studies themselves in commercial laboratories, which they themselves may even own.

Suspicions concerning the credibility of the results of these studies were strengthened when the largest laboratory in the United States, Industrial Biotest Laboratory (IBT), was indicted in 1976 for falsifying test results. Control substances were approved for sale in numerous countries on the basis of the IBT study.

One-Third Are Fraudulent

In Finland, among other places, three substances were not approved for marketing after the IBT scandal. Officials are now studying a couple other preparations, a portion of which was tested by IBT. Most likely new studies will be required in place of the suspicious studies.

The IBT scandal initiated the most extensive report on the credibility of laboratories in the United States. Officials of the U.S. Environmental Protection Agency (EPA) conducted studies on the extermination agents of 82 research laboratories.

According to them 25 laboratories have knowingly conducted fraudulent or such low-quality tests that it is not possible to trust in the results.

On Friday the apostle of Swedish environmentalism, Licentiate in Philosophy Bjorn Gillberg, arrived in Finland to present the EPA's report. According to him hundreds of control substances have been permitted for sale in various countries on the basis of the "criminal" studies conducted by American laboratories.

Gillberg states he obtained an EPA secret report from a certain high official of the EPA and he does not doubt its authenticity. Finnish officials have just obtained copies of the same report from Nordic experts on pesticides and herbicides.

Finnish officials apparently intend to contact EPA officials to verify the authenticity of the report. In the USA the EPA is that authority which approves control substances for the market and in this matter corresponds to Finland's Plant Protection Institute.

In Sweden Gillberg has presented the EPA's report to the Environmental Protection Committee, among others. The umbrella organization for local environmental protection groups has demanded that an immediate ban be placed on all those control substances which were approved on the basis of studies conducted by fraudulent laboratories.

Finland's League for the Protection of Nature, for its part, is demanding that questionable control substances be retested in an impartial research laboratory. In the opinion of the league questionable control substances should not be used for the duration of the study.

"Reports Must Be Read Through"

"Control substances on the market must be gone through item by item and all the toxicological studies that have been conducted on them must be listed and evaluated," states Olli Phakala, a chemist in the Central Medical Board.

He cannot even guess as to how much time this will take. In Finland, however, there are few toxicology experts who would be able to evaluate the toxicity tests on control substances and they would be doing this in addition to their other work.

The Central Medical Board has otherwise been busy this year with the testing of such extermination agents about which new information has been obtained concerning the toxicity of their active ingredients. This year three active ingredients, which the Central Medical Board has not deemed desirable for use, were deleted from the register.

Generally the importers remove such substances from the market without having to be told.

According to Pahkala Finnish law requires clear proof of the detrimental effects of a substance before it is able to prohibit its sale. On the other hand, it has become more difficult to place new items on the market since safety requirements have been tightened up.

There has long been a propaganda war concerning the use of control substances between the environmentalists and those importing and selling these substances.

Enterprises and farmers point out that crops will diminish decisively if they cannot chemically control plant diseases and destructive insects.

Enterprises also emphasize the fact that no large enterprise can afford to spoil its reputation by importing and selling control substances which have not undergone the most reliable testing. There is a desire to avoid scandals concerning cancer and damage to the unborn.

The most significant manufacturers of control substances used in Finland are European, whose "research morality" is argued to be higher than that of the Americans. Nevertheless, this does not eliminate the possibility that some of the testing on European products was conducted in the United States.

Environmentalists, for their part, point out that there is no information on the long-term and extensive use of chemicals. Even the most reliable tests do not reveal all the detrimental effects which a substance can have when introduced into the environment over a long period of time.

One propaganda trump that the environmentalists have is that the research reports sent to the officials of enterprises are secret so that outsiders cannot evaluate the results. The Plant Protection Institute points out that the toxicity tests conducted by enterprises are their property, which cannot be given out for the use of outsiders.

Presumably, the right to secrecy with respect to these reports will be tested in Finland in the highest courts just as the environmentalists are doing in Sweden. On the other hand, even if the studies were made public, an impartial evaluation of them would still be difficult because of a paucity of experts.

Frequently the experts used by the authorities and the experts used by enterprises interpret the results of the studies in different ways since what can be decided or not decided on the basis of toxicity tests is not indisputable.

"It is, however, universally accepted by authorities that these tests are the only ones available and they must be trusted even though they are not 100 percent reliable. If a substance is dangerous, this will become evident even if tests are conducted somewhat halfhazardly," states Pahkala.

Pahkala points out that in addition to medicines, control substances are the best tested chemicals.

According to him the world's toxicologial capacity is sufficient for the complete testing of 500 chemicals annually. There are only 3,500 chemicals which have been complctly tested in use even though there are tens of thousands of chemicals.

"The attitude of the authorities is that we should commence the systematic testing of all new products before they are put on the market," states Pahkala.

There are masses of chemicals in the environment which do not require the kind of safety guarantees that are applied to pesticides and herbicides.

10576
CSO: 5000/2001

BRIEFS

DDT, PCB AFFECT BALTIC--According to a just completed report on the condition of the Baltic Sea, DDT used as an extermination agent, along with its derivatives, and PCP, used by the chemical industry, contribute the most to the pollution of the Baltic Sea. This report is the first to deal with the pollution of the whole area of the Baltic Sea. All seven Baltic countries participated in its compilation. The scientific material was written by approximately 30 scientists. Additional information was provided by nearly 100 researchers. According to the report, DDT is the reason that the bird population is reproducing at a slower rate. Poision has weakened the structure of the egg shell. PCB-substances, on the other hand, are found to be guilty of the disappearance of Baltic Sea seals in the Gulf of Bothnia. In the same manner as birds, seals are also reproducing at a slower rate. PCT-substances and chlorinated terpenes have been found as completely new poisons in recent years in certain areas of the Baltic Sea. It is known that they become concentrated in the food chain, but their effect is not yet known. The countries bordering the Baltic Sea have become heavily industrialized. This can be seen in the heavy metals that have accumulated on the bottom strata of the sea's depressions. Mercury, cadmium, zinc, and lead have increased the most on the bottom strata. Now that the dangers of mercury and DDT have become known, their emission has been forcefully restricted in all countries belonging to the Baltic Sea Agreement. Results have already been achieved: mercury- and DDT-contents in fish have decreased. The Commission for the Protection of the Baltic Sea Marine Environment will convene in Helsinki this week. The meeting will discuss the condition of the Baltic Sea and the application of present knowledge in the practical protection of its environment. [Text] [Helsinki HELSINGIN SANOMAT in Finnish 24 Sep 81 p 12] 10576

NEUTRALIZING PROCEDURE FOR INDUSTRIAL WASTES DESCRIBED

Paris L'USINE NOUVELLE in French Sept 24 81 pp 42-43

[Article by Michel Dabaji: "Elimination of Chlorinated Wastes: A Solution that Meets the Norms"]

> [Text] A dry process for filtration and absorption-neutralization of acid-bearing incinerator smoke is now used at the Gerep industrial wastes disposal center to absorb a non-negligible part of the production of chlorinated liquid wastes from the Paris area. Applied for the first time in this type of activity, this process could be adapted to other industries.

Do you know that there is at least one product whose exportation costs us money? This is not entirely a joke: there are few installations in France capable of eliminating a certain category of liquid chlorinated wastes of the solvent type and other cumbustible wastes. So what is being done? Two specialized companies are employed to go burn them in the North Sea, off the coast of Holland, on two ships, one registered in Germany and the other in Singapore! And this operation is very naturally financed by a government agency.

Thus the level of interest in the installation just completed at Mitry-Compans (Seine-et-Marne) by the GEREP [Group for the Elimination of Polluting Wastes], of the Lyons Water Company. This industrial wastes disposal center, which has been in operation since 1976, has invested 2 million francs in a process, new in France, at least in this application. It will now be used to treat a non-negligible part of the organic chlorinated wastes produced in the Paris region. "In our area of activity," explains Mr. Gerard Millot, Manager of the center, "it is all a question of regulation. If these waste materials are being burned in the North Sea, it is because their combustion produces acid and dust-bearing smoke." There is in France, in the Lyons region, a center capable of treating these waste products within the tight specifications established by the French government concerning air pollution. But on the one hand this center, which uses a scrubber (using water and soda), does not have the capability to handle the whole French production of this type of waste material, and on the other hand, to dispose of it in the Lyons area is more expensive than to carry it into the North Sea.

Incineration Capability Close to 20,000 Tons Year

"Finally, there are still some technical problems in the smoke scrubbing process: the smallest failure (a broken pump or, as it happened before, to introduce waste in the scrubber at high temperature) is sufficient to melt the lower part of the device, which is covered with ebonite." The cost of such an incident runs into several million francs! Finally, the process results in having to treat a high volume of scrubbing wastes.

Previously, everything at GEREP was incinerated "without thinking about the environment" they admit. The gas was run through a humid scrubber producing smoke that did not meet the required norms. A year and a half ago, as a result of the creation of a local protection committee, it became necessary to start meeting the specifications, and produce smoke containing specifically no more than 150 mg/m^3 of dust, and 10 kg/h of chlorine. "It was impossible for me to invest in a very sophisticated scrubber and moreover, such an installation would have required processing scrubbing wastes. I therefore decided," continues Mr. Millot, "to filter the smoke to reduce the dust content and, in order not to have to meet the chlorine specification, not to accept chlorinated wastes!" At least, he will continue burning wastes containing less than 1 percent of this halogen. The rest will be disposed of in the North Sea.

Mr. Gerard Millot, who now has the capability of handling clost to 20,000 tons/year, then contacted the Genevet Company and explained his problem: smoke (bearing unknown components at varying concentrations) to be filtered and containing chlorine (which is present even when the percentage of chlorine entering the system has been reduced), resulting in high risks of corrosion. Furthermore, the smoke comes out of rotating furnaces heated at more than 1,000°C, resulting in a need to cool it in order not to damage the filters, but not too much to avoid condensing the chlorhydric acid. For Mr. Lucien Parrot, of the technical department at Genevet Company, the problem is also that there are also soluble particles smaller than one micron. "I knew I would need an agglomerating additive in order to be able to use a filter downstream from the smoke cooler."

The first tests using calcium hydroxyde resulted in complete failure: slaked lime is unable to absorb the excess water produced by the neutralization of Hcl by the hydroxyde and "everything was getting clogged." The next idea was to use quick lime to be introduced upstream from the cooler and, downstream, the filter to retain dust and lime powder. The idea turned out to be good especially since "for chlorine, still expected to be present in concentrations of less than 1 percent, quick lime could not hurt!"

Efficiency Around 95 to 98 Percent for Chlorine

The first tests carried out starting last February are very promising: not only is dust removed with an efficiency of about 99 percent ("the effluent contained 12 mg/m^3, or almost 10 times less than specified"), but chlorhydric acid was neutralized while stopping the calcium chloride produced. Water was absorbed by the excess lime. "We then thought that since the system worked with chlorine at less than 1 percent concentration," added Mr. Millot, "why not try 2 percent and even "more? Especially since the people at Genevet indicated that it would only be necessary to modify some parts of the installation."

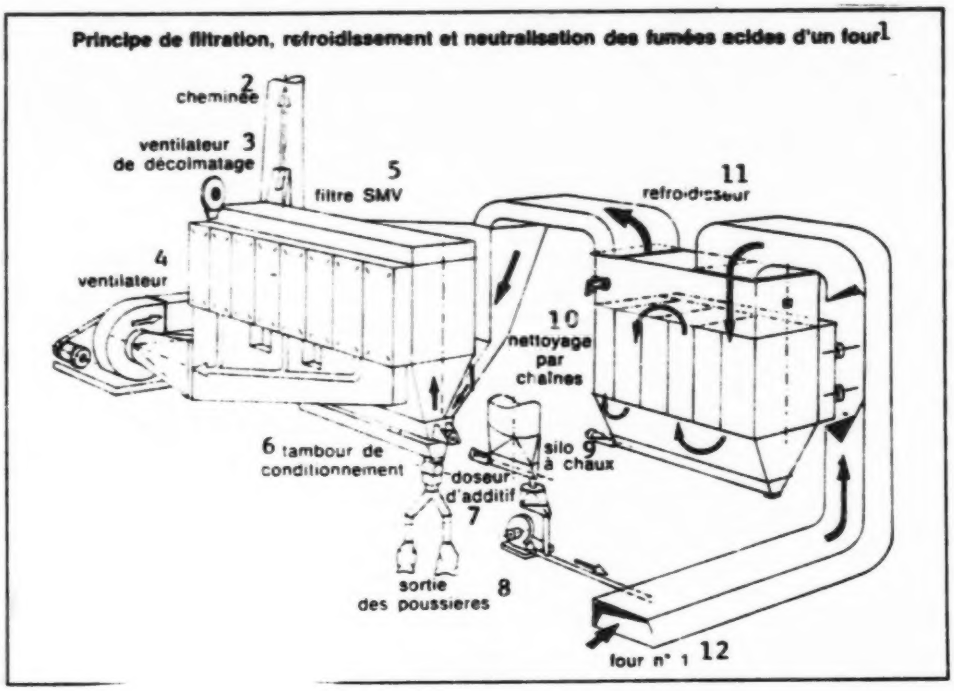
This is how was born this process for the treatment of acid smoke which, according to the responsible government agency, could be substituted entirely for the North Sea method. This is as a result of a first set of measurements carried out last March by the IRCHA [Institute for Applied Chemical Research], using chlorine concentrations of 3, 9, 12, and 15 percent (with the last sample yielding incoherent results) confirms (while waiting for a second set of measurements in September) that the removal efficiency for chlorine is around 95 to 98 percent for chlorine concentrations up to 9 percent.

As for dust, it is almost totally removed in all samples. "If the incoherent results obtained with the 15 percent sample finally show, which is not very probable, that the process is less efficient at high chlorine concentrations, this would not really hamper the operation since the concentration is never higher than 30 percent anyway, and it is always possible to spread the concentration, which is often done, even if only to even out the heat producing capacity. We are therefore in fact always below 15 percent." Another cause of happiness for Mr. Millot is that "using this dry process, we do not have to treat scrubbing effluents and more importantly, just like at Mitry, we also detoxify acid effluents from surface treatment, we recycle the used lime (less expensive than soda) for neutralization."

In fact, as points out Mr. Lucien Parrot, the GEREP installation is only a particular application of an old absorption process used in the brick and roof tile industry. "Here we have demonstrated, by solving a very difficult filtration problem, that it was possible to use cloth filters to treat furnace smoke containing particles smaller than one micron with acid gas (chlorinated or not) in small quantities. I am also planning to install this same process to remove dust, fluorine, and chlorine from a kiln and drier combination at a French brick and roof tiles factory: once cleaned up, the smoke will be recycled into the kiln. The result will be some very important energy savings."

The Process Used

Furnace smoke is mixed with air to lower the temperature to 550°C. It is then cooled some more to temperatures between 120 and 130°C, in order to be compatible with the acrylic cloth filter sleeves, through a tube exchanger which is cleaned using a chain system. Calibrated amounts of lime are introduced at the input to the cooler to neutralize the acid gas. The mixture of dust and additives is then distributed to a conditioning drum, the main part of the installation. It is this drum which is used to recycle the additive to the filter for several hours: at the GEREP installation, lime (almost one ton) remains in the device for about 10 hours and is extracted through this ceramic balls rotor when saturation reaches about 80 percent. Above this level, there is a risk of clogging the filters since calcium chloride becomes deliquescent. This drug system avoids the external recycling of a large amount of powder: it used to place the unused lime in suspension automatically and extract it continuously as soon as required. Unclogging using pulsated air is controlled by an electronic timer. A temperature regulation system prevents risks of condensation at start-up time. Finally, and paradoxically, mechanical failures can make the installation reliable! As an example, an incorrect concentration of the additive results in clogging of the tubes in the hot section of the cooler and causes the system to stop. After six months of operation, no corrosion of the cooling tubes has been noted and the filter is intact. Genevet anticipates a life of at least three years for the filters.


Principe de filtration, refroidissement et neutralisation des fumées acides d'un four 1
2 cheminée
ventilateur 3 de décolmatage
5 filtre SMV
11 refroidisseur
4 ventilateur
10 nettoyage par chaînes
6 tambour de conditionnement
doseur d'additif 7
silo 9 à chaux
sortie des poussières 8
four n° 1 12

Key:

1. Principle of filtration, cooling and neutralization of acid furnace smoke
2. Smokestack
3. Unclogging fan
4. Fan
5. SMV filter
6. Conditioning drum
7. Measuring hopper for additive
8. Dust exit
9. Lime hopper
10. Chain cleaner
11. Cooler
12. No 1 furnace

6445
CSO: 5000/2005

BRIEFS

ATHENS AIR POLLUTION--Athens, 26 Sept--As the Greek capital sweltered in a freak heatwave this weekend, its nine major hospitals have been treating more than 800 people suffering the effects of air pollution. The Pan-Hellenic Ecological Research Centre, cited in Press reports here, blamed a noxious cloud hanging over the city for headaches, fainting, nausea and other respiratory complaints amongst those treated. Environmentalists said exceptionally high levels of nitrous oxide and other toxic fumes in the atmosphere were a public health risk. But by today the Government Health Ministry had refused to declare a state of emergency or take appropriate measures to combat the pollution, they said. The environmentalists said 834 people had been treated for the effects of air pollution in the last four days compared to only 204 in the entire four months preceding the appearance of the toxic cloud. The poisonous cloud has sunk to within 60 metres (about 190 feet) from the ground because of unusually high temperatures and lack of wind. The pollution has become a political issue in the capital as Greeks prepare to go to the polls on October 18. NAB/AFP [Text] [Rangoon THE WORKING PEOPLE's DAILY in English 28 Sep 81 p 5]

CSO: 5000/4902

AUTHORITIES CONCERNED OVER U.S. CHEMICALS TESTING

Stockholm DAGENS NYHETER in Swedish 16 Sep 81 p 6

/"Environmental Center: False Tests Behind Approval of Environmental Poisons"/

/Text/ A large number of chemical pesticides and insecticides which have been used in Sweden were approved on the basis of falsified tests about the damaging effects of the preparations.

This was asserted on Tuesday by the Environmental Center foundation through Bjorn O. Gillberg in a written statement to the Product Control Board of the State Environmental Protection Agency.

The falsifications led to a large number of pesticides being declared harmless by the Product Control Board, when in fact they may be hazardous to people and to the environment.

The Environmental Center maintains that 25 out of 82 U.S. laboratories cheat or falsify the results of their tests.

To support this allegation,reference is made to a secret report by the U.S. Environmental Protection Agency to which Bjorn O. Gillberg has received access and which has now been submitted to the Swedish Product Control Board.

Scandal

The reason why the Environmental Center has scrutinized the U.S. tests is a similar scandal in the United States in 1976, when one of the largest laboratories was discovered to have falsified tests. The disclosure led to a ban in Sweden on about 10 different pesticides and insecticides which had been approved after test results from the United States.

The Product Control Board has not yet reviewed the report by the Environmental Center and therefore does not want to comment on the accuracy of what is asserted. The board does admit, however, that it must rely entirely on foreign laboratories in approving pesticides for use in Sweden.

"We have no funds for conducting out own tests," one says at the Product Control Board.

11949
CSO: 5000/2002

MINISTRY SECTION CHIEF: TIGHTER EMISSIONS COULD HURT EXPORTS

Stockholm DAGENS NYHETER in Swedish 8 Sep 81 p 13

[Article by Sven Eric Ericson: "Auto Industry: Emission Standards Threaten Exports"]

> [Text] It is not at all certain that the government wants stricter enforcement of the emission regulations as proposed by the National Environmental Protection Board.
>
> That is what Bo Assarsson, ministry section chief for the environment section of the Department of Agriculture, says regarding the fact that the National Environmental Protection Board wants to make more strict the emission inspection beginning with the 1983 car models.

The National Environmental Protection Board's tightening up means that henceforth more cars will be checked. It will not only be the so-called "prototype" cars that will be subject to exhaust emission control but also the mass produced cars.

The stricter inspection has released a wave of protests from the auto industry, which maintains that the export potential of the Swedish car industry will be worsened, and that the cars will be more expensive on the domestic market.

"If Sweden now introduces more particularized regulations and stricter requirements, our foreign competitors will regard it as if we were introducing trade barriers in their export market.

"Furthermore, they will believe that it is Saab and Volvo that are behind the stricter regulations," says Hans Tornqvist, information chief for Saab's passenger car division in Linkoping.

"And there is a great risk that we may be subject to retaliation measures."

EC Standards

The auto industry wants Sweden instead to implement the standards for exhaust emission control that prevail within the EC-countries. And the corporation leadership within Volvo and Saab receives full support from the employees who agree with the companies' leadership on this issue.

"We cannot behave as if we live on an isolated island. We must follow the standards that apply on the European market, says Arne Gennenberg who is on the board of the plant union local at Volvo in Goteborg."

"We are not able to put Sweden at the forefront of developments, because employment will be threatened as a result. We therefore support the Volvo management in this issue," says Gennenberg.

The same is echoed by Bo Melander, vice-chairman of the union local at the Saab plant in Trollhattan.

Of course we are not against exhaust emission control. But if we in Sweden create unique rules, the risk is great that we will be left behind. And for every new tightening of the emission regulations we lose a few jobs, says Melander.

The Department of Agriculture now states that the auto industry's arguments cannot be overlooked.

Sweden adopted the current emission regulations in the beginning of the seventies, regulations that were stricter than elsewhere in Europe.

"We balanced the economic costs and estimated health effects against the background of the conditions that applied then," explains Asarsson at the Department of Agriculture.

New Balancing

But now we must balance anew, and presently we are working very intensely on this issue. We cannot overlook that the economic conditions have changed and that it is tougher for the auto industry today.

When the auto industry called on the Minister of Agriculture, Anders Dahlgren, in the middle of August, he stated clearly that there will be no adjustment of the current emission regulations to conform to the standards that prevail within EC.

Next week the auto industry will again call on the minister of agriculture.

"Whether the administration tears up the intensified control measures that the National Environmental Protection Board has proposed depends on which viewpoints the auto industry offers," states Assarsson.

The National Environmental Protection Board's tightening of the enforcement regulations is no invention of their own, but goes back to a Riksdag resolution from the previous year.

The department has also acted according to the latest survey results conducted by Svensk Bilproving [The Swedish Motor Vehicle Inspection Company] which shows that half of last year's models of Saab and Volvo do not comply with the limit set for discharge of carbon monoxide, hydrocarbon and nitrogen oxide that is required in the car exhaust emission ordinance.

9583
CSO: 5000/2002

ENVIRONMENTAL AGENCY STAFFER ATTACKS AUTO INDUSTRY ON EMISSIONS

Stockholm DAGENS NYHETER in Swedish 7 Sep 81 p 2

[Article by Sten Lundberg: "National Environmental Protection Board Severely Criticizes Auto Industry: Produce Cars That Comply With The Legislation"]

> [Text] A new study from the Swedish Motor Vehicle Testing Company shows that not even half of Volvo's and Saab's '81 models meet the emission control standards, writes Sten Lundberg, press ombudsman for the National Environmental Protection Board. We now demand that the auto industry accept responsibility and begin to produce cars that comply with the law that has been in force since 1976, writes Lundberg.

In Sweden we have legislation that prescribes that gasoline-powered passenger cars built in 1976 or later may emit a certain, closely specified, amount of pollution into the air. In other words, the car manufacturers must produce cars that comply with these regulations. But the car manufacturers do not do that. It is not that they are unable to, but that they have chosen to interpret the law so that the regulations will only apply to the car model that is being tested in the beginning of each model year. When the mass production has started, it suffices, according to the interpretation of the auto industry, that the car come close to the allowed limits.

At the meeting at the National Environmental Protection Board some time ago, Saab's representative estimated that about 50 percent of their cars did not meet the standards. Studies that the Swedish Motor Vehicle Testing Company have made through the years also show quite clearly that this is the case.

The most recent study, which was ready this week, shows that not even half of the '81 models of Saab and Volvo meet the standards.

Although it says clearly and unmistakably in the proposition from 1968 that every vehicle must meet the regulations, the auto industry does not manufacture such vehicles, as the industry chose to interpret the law in its own way. How is it possible that this has been allowed to continue since 1976?

The Swedish emission regulations tend to be essentially against the provisions of Parliament Bill 160 of 1968. It was the then Minister of Communications, Svante Lundkvist, who received a mandate from the Riksdag to amend the road traffic ordinance in order to be able to control automobile exhaust emissions.

In the law the government is given full authority to set the limits of emission. The same has also happened with the car-exhaust emission ordinance in which the government has decided that for cars manufactured in 1976 and later, the following should apply: "Cars equipped with...a device to limit pollution in the exhaust fumes. The device shall be regarded as acceptable if the engine during testing...discharges pollution which, calculated per kilometer, contains a maximum of 24.2 grams carbon monoxide, 2.1 grams hydrocarbon and a maximum of 1.9 grams nitric oxide..."

There is also a requirement that the device shall be of a certain durable quality. These regulations apply to cars manufactured in 1976 and later. This is how it is stated in the car exhaust emission ordinance. Not even the auto industry can get away from that.

Every Car

As the basis for the bill, Lundkvist had a draft report from the Department's working-committee for car emission problems. The report dealt with the question of whether the impending emission regulations should pertain to the average or the maximum limit for each car. The analysts were of the opinion that the latter alternative was to be preferred, especially from the standpoint of inspection.

The bill reads as follows: "According to the federal regulations in the United States, the limits are the average amount of emissions from all vehicles of the same type. (Within parenthesis it may be mentioned here that the United States abandoned this approach in 1972 and started to employ the maximum limit for each vehicle. My notes). As such a system contains difficulties from the standpoint of inspection, the working group prescribes that the Swedish regulations define the limits for pollution discharge from gasoline-powered cars as the maximum limit which must not be exceeded by any vehicle. With reference to the fact that a certain variation in engine production is unavoidable, the manufacturers must therefore, the working-group points out, aim for an average limit which is lower than the prescribed limit in the production [output].

A little later in the bill is the section by the Minister of Communications himself, in which he emphasizes this argument and says: "A construction of the limit as a maximum limit from the standpoint of inspection has much greater advantages than a construction based on an average limit as the limit."

"I now ask. How can leaders for the auto industry interpret this in such a way to mean that it suffices that the series-produced cars are within the neighborhood of the three above specified limits? This is not just a question of interpretation. It is a question of reading."

A Threat

Unfortunately this is not finished. Furthermore, the auto industry has recently gone to different mass media and accused the National Environmental Protection Board of having made the pollution regulation more strict this summer. The National Environmental Protection Board has been painted as a threat to employment within the auto industry, as an agency that goes beyond its authority and makes decision in affairs which actually should be made by the government.

If a lie becomes truth just by being repeated enough times, then unfortunately many good journalists are now on the way of fulfilling that prophecy. This is really how matters stand. One just has to start reading again.

In March 1979 a unanimous agricultural committee--observe, a unanimous committee--wrote the following in reference to a number of motions in the matter: "A question, according to the opinion of the committee, that should be given special attention is the possibility of improving the observance of the requirements on motor vehicles with respect to exhaust emission control, according to the car exhaust emission ordinance."

The committee writes further: "As specified in the following the committee agrees on certain draft proposals of the nature that the National Environmental Protection Board will be the responsible authority in the car exhaust affair." By a decision in this direction, the chances for coordinated and vigorous efforts to deal with the car exhaust problem should increase even on the enforcement level."

Likewise, the Riksdag's decision was unanimous when the committee's report was dealt with there, and the administration then changed the car exhaust ordinance (SFS 1979:673) and commissioned the National Environmental Protection Board to submit "more detailed regulations". Work on that was started immediately, and after going through the usual work procedures, including a circular report to concerned authorities, the Department came to a decision this summer as to the nature of these more detailed regulations.

In general, the application of these rules would be random testing of series produced cars beginning with 1983 models that have been driven between 300 and 1500 miles. In other words, the cars shall be new, but "broken in". The manufacturer can also elect to include cars that have not been sold. If the cars are taken off the "road", the manufacturer gets a chance to service and adjust the cars before testing.

In case more than 40 percent of the cars tested of the same model do not pass the test, the exhaust allowance for the model year can be withdrawn. However, the manufacturer will get the opportunity to correct the flaws in the cars he has sold and the cars he expects to sell of that year's model.

Soft Rules

The implementation of these regulations is indeed very lax. I now ask: How can the auto industry leaders maintain that the National Environmental Protection Board has thereby made more strict the exhaust emissions regulations? Furthermore, how is it possible to maintain that the Department has gone beyond its authority by promulgating these regulations?

The Swedish car fleet is today the largest source of air pollution in the country. It is responsible for about 1.5 million tons of pollution each year. There are studies that show that at least 200 (certain American studies say up to 1000) cancer cases every year in densely populated areas are due to air pollution. The car exhaust issue is therefore also a health and environmental issue and not a question of saving 500 kroner for the car consumer who is about to buy a car for perhaps 50,000 kroner. Besides, even the car consumer has lungs and naturally belongs to the group of people who are the most exposed to exhaust fumes.

/The National Environmental Protection Board is now demanding through the new enforcement regulations, that the auto industry face its responsibility and begin to manufacture cars that comply with the legislation that has been in force since 1976! Is that an unreasonable demand?

9583
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13 November 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 328

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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13 November 1981

WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

No. 328

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BRIEFS

SALINE SOIL CONVERSION--Bombay, 21 Sep--Soil scientists on the coastal region of the country discussed here today ways of converting the seven million hectares of salt-affected region into productive areas. They are attending a two-day conference on saline soil organised jointly by the Konkan Krishi Vidyapeeth and the Karnal-based Central Soil Salinity Research Institute. Inaugurating the conference, the vice-chancellor of the vidyapeeth, Dr P. V. Salvi, said soil was a scarce and valuable resource and it should be put to maximum use. Maharashtra alone had 63,537 hectares of coastal saline land. The vidyapeeth's two research stations at Panvel had done useful work in evolving technology for cultivating salt-affected areas. Dr J. S. T. Yadav, director of the institute, said some of the saline wasteland could support fuel-wood plantations. Kerala has already evolved a new technique of using these lands for food and cash crops, he added. Mr M. S. Dayal, general manager (marketing) of the Rashtriya Chemicals & Fertilisers Ltd., welcomed the gathering, and Dr S. B. Kadrekar, dean (agriculture) of the vidyapeeth, proposed a vote of thanks. [Text] [Bombay THE TIMES OF INDIA in English 22 Sep 81 p 3]

CSO: 5000/7006

REAFFORESTATION PROJECT BEGINS IN EASTERN PROVINCE

Colombo SUN in English 10 Oct 81 p 13

[Article by Suren Peiris]

[Text] The reafforestation project in the Eastern Province was inaugurated at Rugam in the Kalkudah electorate by the Minister of Lands and Land Development and Mahaveli Development. Associated with Minister Gamini Dissanayake was the Minister of Home Affairs the Deputy Minister of Posts and Telecommunications and the District Minister of Batticaloa.

The main reason as to why Minister Gamini Dissanayaka chose and instructed the State Timber Corporation (S. T. C.) to commence this re-afforestation project was to expeditiously reafforest the areas devastated by the cyclone in the Eastern Province. It has been estimated that over 90 per cent of the teak trees of varying grades were either twisted, blown down or destroyed. What ever timber that could be used, was salvaged by STC and sold to the public. This was done in a way where it was seen that the timber was utilized in a beneficial way by the consumer. Even the residue material that was left after sawing operations was used in the manufacture of wood charcoal. This charcoal is now being successfully used for domestic cooking purposes. The STC will now plough back a large portion of the money into this reafforestation programme.

The programme in the Eastern Province covers around 30,000 acres of cyclone affected areas. An extent of about 1,500 alone this year would be planted with teak and indigenous species.

In order to facilitate the programme the State Timber Corporation has already established nurseries in the Eastern, North-Central, Northern Western Provinces and up-country areas to nurture plants.

These nurseries have been situated on land areas of over 50 acres in extent and indigenous mixed species like Halmilla, Satin, Khomba, Mahogany and Welang are being nurtured for the purpose of planting.

The intention of Minister Gamini Dissanayake is to get Departments and Corporations coming within his purview to view tree planting, landscaping and environment improvement from a more long-term point of view and within the framework of conservation and the development of resources.

This has been necessitated because within the last two decades forest cover in the country has been reduced to 25 per cent of the total land area. In 1958 Sri Lanka had a forest cover of around 6 million acres of land which was equivalent to around 50 per cent of the total land area of the country.

The Chairman of the State Timber Corporation following the directive of Minister Gamini Dissanayake has begun varying aspects of reafforestation. Among them are the dry areas in Mannar and Mankulam have been earmarked for the planting of fuelwood for estate timber and fuel requirement. This is in addition to the massive reafforestation project taken by STC in the Eastern Province. It is evident that the State Timber Corporation wants not only to increase the timber and fuelwood resources in the country, but also to build climax type forests and at the same time preserve the complementary ecological system.

CSO: 5000/4903

CZECHOSLOVAKIA

NEW CLEAN AIR TECHNOLOGY EFFECTIVE AT CHEMICAL PLANT

Prague LIDOVA DEMOKRACIE in Czech 1 Oct 81 p 3

[Article by ena: "We Are Responsible for Our Environment--Better Air in Lovosice--Joint Achievement of Science and Culture"]

[Text] The environment, its creation and protection, is a high priority topic today. You only need to look around to see that we are not exaggerating. Take emissions, for instance. We all have had at times the unpleasant sensation of breathing air which is far from pure. Or the dying woods. You must have paused more than once before trees which were bare of leaves. And perhaps you were appalled by polluted water in a river. We must not neglect our environment. We are responsible for its purity.

Protection of the environment against pollution is a long-term and demanding task both from the technical, economic and organizational aspects. How we deal with it directly affects the health of every man and the aesthetic appearance of the places in which he lives, works and rests.

Clean, healthy environment is becoming a new criterion for our general progress. Hence, it does not suffice to tally contributions from existing production capacities and expected contributions from the realization of new actions and new technologies. A comprehensive view of economic growth must also take into account ecological problems and risks. They must be controlled immediately. With the passage of time they would cost us more than these immediate contributions...

Experts from many different fields are therefore joining forces to protect the environment: scientists and researchers with their latest discoveries and workers from the production sphere with their valuable experience and determination to do the best for our environment.

Nitrogen oxides are among the most serious air pollutants. Although such emissions are limited locally, they represent a health and ecology problem, particularly in the vicinity of the pertinent plants.

Nitrogen oxides are contained in the end gases developed during the production of nitric acid. The composition of these gases depends on the specific conditions of production. The most effective mode of removal of these products from end gases is their catalytic reduction to elementary nitrogen. And this is best achieved by selective reduction using ammonia as the reducing agent.

Based on the principle of this progressive method are the two parallel-connected Renox 604 units with an output of 2 x 60,000 cubic meters used since last year to prevent the escape of harmful substances in the atmosphere of Lovosice. They were installed there in the North Bohemian Chemical Plants.

Renox 604 units in the Lovosice chemical plant are a product of the 17-member expeditor team headed by Eng Jan Koci from the Prague branch of the Research Institute of Chemical Equipment in Brno. The members of this team joined their forces with workers of the Institute of Inorganic Chemistry of the Czechoslovak Academy of Sciences, Chemoproject in Prague, Victorious February Plants in Hradec Kralove and North Bohemian Chemical Plants in Lovosice. The result is a healthier environment in the town and its vicinity, and savings of 8.6 million crowns compared to the original project. At present, the expeditor team is preparing another Renox set for the East Bohemian Chemical Plants in Pardubice.

Other advantages of selective reduction, besides low consumption of the reducing agent, include low capital expenditures and the independence of the set from the technological parameters of nitric acid production itself. It can be added to the existing production plants and its operation does not affect production in any way. The set can also be used as a direct component of the nitric acid production plants.

The Renox 604 is produced by the national enterprise Victorious February Plants in Hradec Kralove and is exported by Technoexport, the joint-stock company for foreign trade in Prague. Additional factors speak in favor of the Renox 604: no waste products are generated by the process, its operation calls for a minimum number of workers while the effectiveness of operation is high, and currently available raw materials and energy can be used.

Chemistry is a highly developed industrial field. We have become accustomed to its providing a vast number of products necessary for our life and the entire national economy. Chemistry is also dangerous, however. It threatens our environment and the entire vegetable and animal kingdoms. We must quickly eliminate this other side. This is one of those examples in which man, having disturbed the equilibrium of nature, has assumed responsibility for its fate in the future.

9562
CSO: 5000/3002

RESIDUE-FREE INCINERATOR DESCRIBED

Prague TECHNICKY TYDENNIK in Czech 14 Jul 81 p 8

/Article: "An Incinerator Without Emissions"/

/Text/ Present-day incinerators for solid household wastes frequently are subject to very high costs for cleaning of combustion products. The investment and space costs of separate equipment for cleaning combustion products are close to the cost of the incinerators themselves.

From monitoring developments, we can state that moist cleaning of combustion products is increasingly being replaced by dry cleaning because of the high operating costs of the former method, even though the investment cost of dry cleaning of the gas is considerably higher.

The equipment described here provided optimal burning and good cleaning of combustion products with low investment and operating costs. The requirement in its development was to design an incinerator for combustible radioactive wastes which would have small volume, would emit only negligible quantities of harmful substances, and would have a high level of operating safety. These conditions also apply, of course, to conventional incinerators, but in this case particular attention had to be devoted to the considerably more stringent requirements regarding emissions in the incineration of radioactive materials. Optimal precleaning of the combustion products was expected to result in a smaller load and thus considerably greater filter life.

The equipment was developed and tested by the nuclear research incinerator at Julich in West Germany (KFA). It had the following operating characteristics: combustion 99 percent, percentage of dust in combustion products less than 0.05 g/Nm^3, CO content 0.01 percent, filter fabric life 1,000 hours; the combustion temperatures were 800°C in the main incinerator area and 1,000° in the secondary area.

The incinerator consists of a firebox which contains a secondary combustion chamber typical of this equipment. The wastes for incineration fall from a feed unit to a two-piece vibrating grate in the main firebox. The air required for combustion flows from above and is exhausted below through the incandescent bed lying on the vibrating grates. The vibration of the grates continuously shakes loose part of the bed, so that a thick bed of ash is formed below it. Above this, combustible gases flow downward and are mixed with air for further combustion, so that the material which has settled in this location is further incinerated.

Typical of this approach and essential for combustion products quality, however, is residue-free combustion of the particles carried by the current of combustion products. Accordingly, these combustion products are fed into the secondary combustion chamber located around the ash bed, by means of a filtering fabric resistant to high temperatures, on which a layer of dust is deposited. Here, at temperatures above 1,000°C, components of the exhaust gases are burned by air which is fed in for secondary combustion; this process is catalytically supported by active components of the dust layer. At the same time, the particles which still remain in the combustion gases are filtered out.

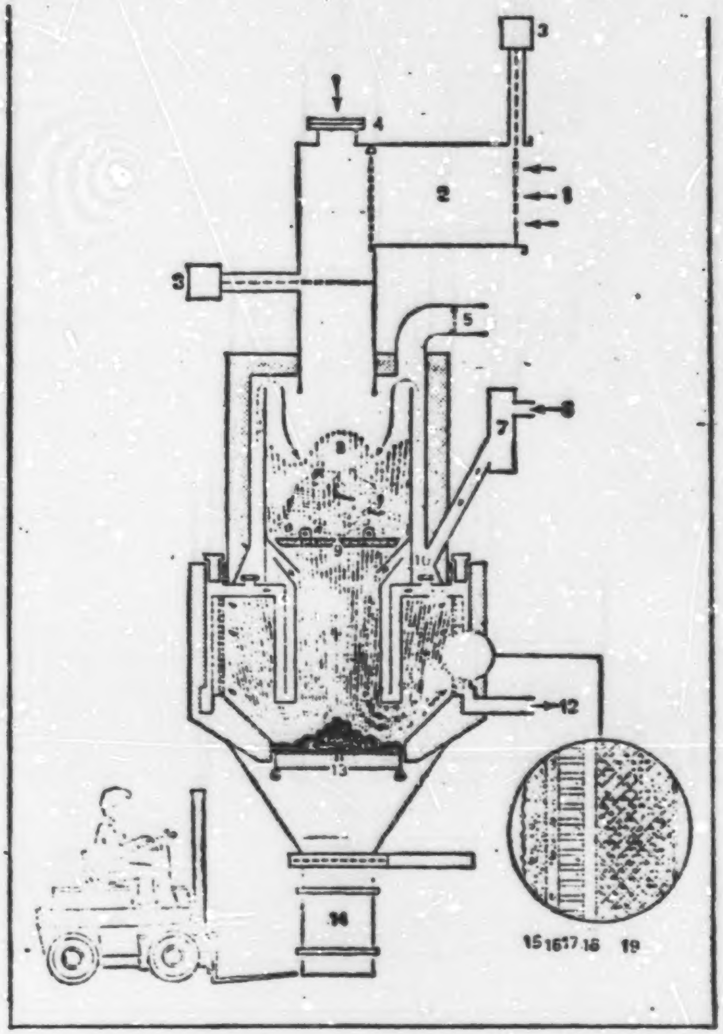
The dust layer on the vertical, relatively flexible filter fabric, folds up when a certain operating condition is reached and falls onto the dust bed. This cleans the filter fabric surface automatically at specific time intervals. The increase in the flow resistance produced by the dust layer on the filter fabric is insignificant, so that it has no unfavorable effect on the operation of the equipment.

The life of the filter fabric is about 1,000 hours; it can be replaced without special equipment.

The incinerator developed and tested by KFA has a capacity of 50 kg of waste per hour; this capacity is suitable, for example, for operation in clinics, biological institutes and small industrial operations; but it could be dimensioned for a larger capacity.

Operation of the Incinerator

Key:
1. Introduction of wastes
2. Feed box
3. Control damper
4. Inspection port
5. Safety valve
6. Combustion air intake duct
7. Air preheater
8. Main firebox
9. Firebox grates
10. Secondary combustion air regulator
11. Secondary combustion air intake duct
12. Combustion products outlet to chimney
13. Dust removal
14. Residue after combustion
15. Dust layer
16. Filter fabric resistant to high temperature
17. Perforated ceramic plate
18. Channel for cleaned combustion products
19. Lining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8480
CSO: 5000/3024

NOISE POLLUTION MEASURES DESCRIBED

Prague TECHNICKY TYDENNIK in Czech 14 Jul 81 p 8

/Text/ Against Textile Machinery Noise

The Textima combine in East Germany, a producer of textile machinery, has already held two conferences attended not only by designers and scientific and technical personnel from the textile machine building sector, but also by textile production, union and labor safety and health protection personnel, at which they jointly discussed protection against noise in textile machinery. And now there has been a substantial change: while in the past a machine was developed in accordance with technological requirements, and only then did they begin work to decrease its noise to prescribed levels, now noise protection requirements are included in the development requirements for each new textile machine, and adherence to proper working conditions during its operation is considered alongside its technical functions. The Liropol pile machine has 5 to 7 times the capacity of weaving machines, but half the noise. In addition, a newly developed carpet machine has considerably lower noise, with more than twice the productivity of standard weaving techniques. Thus textile machine designers have focused on making use of all possibilities for decreasing noise, particularly in the machines which are the noisiest in the textile industry.

A Personal Noise Indicator

The Institute of Physiology, CSAV, in Prague has developed a semiconductor pocket device which measures the accumulated noise dose to which the user has been exposed. When a specified limit is exceeded the personal indicator gives a colored light signal. The noise is recorded by a microphone, and intensities exceeding a prescribed limit are integrated by electric circuitry to give the equivalent noise dose (intensity times time), which is continuously displayed on a meter. The dose is expressed as a percentage of the maximum permissible dose according to Czechoslovak standards, i.e. 100 percent corresponds to 85 dB for an 8-hour period or 115 dB for 5 minutes. The device makes possible effective protection of workers in industry against the harmful effects of noise, and may also be used for running measurements of the instantaneous noise intensity. It will be produced by the Znak production association in Brno.

8480
CSO: 5000/3024

IDB TO FUND STUDY OF COASTAL AREAS, BEACH EROSION

Bridgetown ADVOCATE-NEWS in English 26 Sep 81 p 2

[Text] The Inter-American Development Bank (IDB) has announced the approval of a Can$[illegible] 000 technical co-operation grant to finance a pre-feasibility study of ways to conserve the beaches and coastal areas of Barbados.

According to the bank, the projects will consist of a preliminary diagnostic survey of the nature and possible causes of beach erosion and accretion along the island's coastline, pre-feasibility studies of the strengthening of the environmental division of the Ministry of Housing, Lands and the Environment.

Maintenance and improvement of the Barbados coastline and beaches is of critical importance to the tourism industry, which is a major sector in the nation's economy and a leading source of foreign exchange income.

"In 1978 the sector accounted for 11.6 per cent of the country's Gross Domestic Product. By 1983 this amount is expected to increase to 13.6 per cent," the bank said.

Erosion has been occurring along the entire coastline of Barbados, particularly along the West Coast between Bridgetown and Sniltens Bay and on the south coast from Oistins to Bridgetown.

The bank's technical co-operation was extended to the Government of Barbados from the Canadian Fund for the Preparation of Development Projects.

The executing agency for the project will be the Ministry of Housing, Lands and the Environment.

The studies will be undertaken by a Canadian consulting firm which will be selected by the Government of Barbados.

Specifically, the consultants will examine viable alternatives for protecting the south and west coasts and beaches from the technical, economic and financial point of view, will identify and evaluate possible damaging effects to the Barbadian economy of not taking corrective measures as well as the costs involved in solving the problems under different alternatives, and will develop terms of reference and cost estimates for carrying out a feasibility study and analyse all relevant legislation pertaining to the beaches and coastline.

In addition, the project will include training in Canada of two professionals from Barbados in environmental management and coastal engineering.

On their return, these professionals will be assigned as full-time employees to the environmental division of the Ministry of Housing, Lands and Environment.

CSO: 5000/7507

BRIEFS

MARINE POLLUTION--The continuous pollution of the immediate offshore sea area between Oistins and Hastings, is leading to the disappearance of some forms of marine life which were once common to the area. This assertion was made last week by Opposition senator Wes Hall in the Senate during debate on Government's plans to acquire land at Rockley beach, to construct toilet facilities and accommodations for beach vendors. Hall said that sea-moss, sea-eggs and some species of fish and shelllife had virtually disappeared because of the pollution. He stated he was pleased to hear that Government was preparing toilet facilities, a great need for many years at Rockley, but hoped that local people would not experience difficulty in using them. Senator Hall also called for the appointment of more Parks and Beaches rangers to help maintain the quality of south coast beach areas, noting that there was only one ranger policing from Long Beach to South Point. [Text] [Bridgetown THE NATION in English 29 Sep 81 p 3]

CSO: 5000/7507

BRIEFS

EXTENSIVE FLOOD DAMAGE--Ocotepeque, Honduras, 15 Oct (ACAN-EFE)--A "state of emergency" has been declared in western Honduras, where rivers and streams have caused floods, killing one person and causing extensive damage in several communities. The authorities said that one person died and several cattle ranches, sugar and basic grains plantations and citrus fruit and tobacco groves were destroyed by the floods, which have also interrupted roads and destroyed bridges. The damage is estimated in the millions, but the exact amount has not been determined. Air and land reconnaissance reveal more damage every day, especially on the communications routes, which has the authorities concerned. Lempira, Ocotepeque and Copan departments are most seriously affected by highway destruction. The (Higuito), Aruco, Catapa, Ajagual and Grande Rivers, which are fed by the waters of numerous streams and brooks, have overflowed their banks. The authorities said that bad weather continues in the region and that more communities of the region could be isolated, because the foundations of several bridges in the area which have been inspected are being undermined by the floodwaters. [By Armando Cerrato] [Excerpts] [PA151835 Panama City ACAN in Spanish 1625 GMT 15 Oct 81]

CSO: 5000/2012

MUCH OF NATION'S WATER SUPPLY SAID TO BE POLLUTED

Paris AL-NAHAR AL-'ARABI WA AL-DUWALI in Arabic No 227, 7-13 Sep 81 pp 13-14

[Article by Fadiya al-Sharqawi: "Two Systems--Water and Sewage--Intersect and Impinge On Each Other; We Are Drinking Poison and Expect Cholera; Beirut's Water Supply, and That of Marj 'Uyun, are Clean; the Only Difference Between Mineral Water and Ordinary Water Is the Chlorine"]

[Text] Do the Lebanese people, particularly those who live in the suburbs, know that water samples from 'Ayn al-Dalbah have not been tested in 5 months? Or that this water supply is the one that is most tainted by pollution and germs because of its continual exposure to excrement in the sewage which mingles with it?

Do the Lebanese people know that since the outbreak of the events the required tests of the water supplies everywhere--North, South, East, and West--have not been carried out, with the exception of Beirut, where the central laboratory is located and can perform these tests without difficulty?

Do the Lebanese people know that the disinfecting, which is done by the Water Authority everywhere, is confined to haphazardly adding chlorine to the water supply we drink without any analysis or computation of the quantities? Adding this substance to water requires sufficient study so that no long-term harm is caused to those who consume it.

Do the Lebanese people know that most of the sewage systems, which have not been overhauled or modified since the time of the Mandate, mingle with our drinking water systems?

Do the Lebanese people know that, according to an employee of the Ministry of Health, with the exception of Beirut and Marj 'Uyun there are practically no water sources fit for drinking if cleanliness and freedom from contamination are taken into account?

So the Lebanese people are being slowly poisoned day by day, either by the presence of germs in the water from excrement and the like, or by too little or too much disinfectant in the drinking water. The state goes about posioning its citizens to the end, particularly those with low incomes, while giving assurance--either appropriately or inappropriately--that the water is fit for consumption and that it is germ-free. The evidence for this--which lacks substance in Lebanon--is that a cholera epidemic has not yet occurred here.

Who is responsible for this "puzzle" which is called water? Who can be examined and held accountable in this matter when "this matter involves more than one ministry and authority" according to the minister of public health, Dr Nazih al-Bizri? Should the citizens resort to mineral water, which we have been inclined to do whenever a crisis in the water supply occurs in Lebanon? Its price has risen sharply of late. Can that be a solution to the problem, particularly when there is no difference between mineral water and ordinary water other than the presence of chlorine?

These are questions we put to the head of the central laboratory, Dr Sahl Murad. He answered as follows:

[Answer] Beirut's water supply is clean and pollution-free. That is, it is free of the germ Escherichia coli, the presence of which is an indication of pollution by human or animal excrement. We have not received specimens of water for testing from 'Ayn al-Dalbah since March because of the security situation. We rarely receive samples of water from the North because there is a laboratory in Tripoli to analyze them. Before the outbreak of the events they used to send us samples for testing for additional reassurance. But we still continually receive samples from Jubayl.

Although we have not tested the water of al-Baruk in a long time it is clean, even if it sometimes becomes polluted by certain germs present in the soil which are harmless and are called coliform. The water supplies of Sidon and the South are also clean. We used to receive samples from them for testing continually. But because of the recent Israeli raids and the destruction of the bridges we no longer receive anything from them. We receive nothing from the border area or from al-Biqa' or al-Hirmil, with the exception of Zahlah which has resumed sending us samples for testing since the recent events.

[Question] Must the testing of specimens be carried out on a daily basis?

[Answer] Analysis of the water must be done daily. But this also depends on the place. The bigger the locality the more urgent the need for daily testing. This is the case in Beirut, Sidon and Tripoli, for example. But even that is not enough. Analyses of various samples from a variety of sources must be made. In the past we used to receive samples even from homes and shops in addition to those from the municipalities.

[Question] Don't you think that this is the responsibility of the laboratory?

[Answer] In the past, when things were more peaceful, there were teams belonging to the Ministry of Health which traveled throughout Lebanon in accordance with an agreed-upon program in force in the central laboratory and the Department of Disease Prevention in the Ministry of Health. However, because of the security situation and a shortage of vehicles and employees for this purpose this measure, which had been carried out in addition to the tests conducted by the water authorities and the delivery of samples to us, has been discontinued.

[Question] What about the wells the people use which have become customary, particularly in modern buildings? Are they fit for drinking and other uses?

[Answer] Most wells near the coast are polluted and not fit for drinking because they are near the sewers which are close to the surface at the shore, and because the sea water, which in Lebanon is polluted, reaches them. However, deep wells, most of which are found away from the coast, are less polluted, as far as drinking is concerned. They can be used for external use, as well as for cooking, as long as the water is boiled. But none of these water sources is fit for drinking or for washing vegetables. They can be made fit, however, if the people put a drop of chlorine in each liter of water and let it stand for 15 minutes to take effect and kill the germs.

[Question] What diseases can be caused by the water?

[Answer] Ninety percent of water pollution is caused by excrement which by itself poses no threat to public health except in combination with water. Its presence in the water is an indication that dangerous germs such as typhoid, paratyphoid, cholera, dysentery, poliomyelitis and acute hepatitis are present.

[Question] Is it normally advisable to drink mineral water when the ordinary water is polluted? What is the difference between ordinary water and mineral water in Lebanon?

[Answer] There is no difference between mineral water and ordinary water in Lebanon besides the absences of chlorine which we add to ordinary water. I believe that all water in Lebanon would be mineral water, were it not for the chlorine which is added to it.

[Question] Does this mean that [mineral water] is exposed to pollution the same as ordinary water?

[Answer] Mineral water may sometimes contain harmless germs from the soil. But these germs can become harmful from long-term contact with the container they are in--that is, for more than a year--particularly if these plastic containers are exposed to high heat. That is what alters the water's flavor and odor.

The Role Of the Ministry Of Health Is Inspection

What does the minister of health think about all this? Is he alone responsible for this matter, particularly when it is the Ministry of Water Resources which supervises the distribution and disinfection of water, while the municipalities are responsible for the sewage systems?

Minister Nazih al-Bizri says:

[Answer] The Ministry of Health's connection with the cleanliness and purity of water involves inspection and laboratory analysis. Keeping the water clean and germ-free is the responsibility of the Ministry of Water Resources and the water authorities which must be equipped with a laboratory for performing daily tests on the water, and which must have the tools necessary for disinfecting the water on a continual and regular basis. The job of the health inspectors, other doctors and employees of the central laboratory is confined to publishing the laboratory reports and verifying the results of the disinfecting operation which must be carried out on a continual and regular basis. In the event of any suspected contamination specimens are taken to the central laboratory for testing. If the water turns out to be polluted the water authority, which is responsible for distribution and monitoring, is informed and is requested to reapply its disinfectant devices and monitor the water more vigorously. The Ministry of Health will continue to retest until it is certain that the corrective measures have taken effect and that the water has become safe. But because of the deteriorating security situation there has been a shortage of inspectors and they are less able to move about. This has led to infrequent monitoring. I believe that the reason cholera has not broken out in Lebanon so far is simply due to the fact that the water has not become polluted and is, from the standpoint of health, at a high level. We hope that security will return to allow increased and more precise and more effective monitoring.

[Question] Since there is a shortage of inspectors why don't you hire new ones?

[Answer] It is difficult to hire new inspectors because they are not needed. We are afraid that if we did, the security situation would prevent them from carrying out their work.

[Question] There have been many cases of illness due to water pollution. Don't you think the minister of health should publicize this matter, even if it does not directly fall under his responsibility?

[Answer] Not every case of diarrhea is a case of an infectious epidemic which is attributable to polluted water. If that were so the diarrhea would be of an epidemic nature. But diarrhea is still occuring on an individual basis, as a result of contaminated food more than anything else. This is due to faulty coordination among the ministries. This job belongs to the Municipalities Department for the most part, to the Department of Water Resources and Water Inspection to a lesser degree, and thirdly, to the Ministry of Health. It is up to them to make sure that the water and food are free of contamination through inspection and laboratory analysis. It is the job of the ministry to plan the hygienic measures which must be followed and to continually publicize this subject for the purpose of guidance, training and hygiene education. But the task of implementation belongs to the Ministry of the Interior, the municipalities, the Ministry of Economy, the Department of Food Inspection and the Ministry of Water Resources, which supervises water distribution. If the Ministry of Health wanted to carry out all of these tasks it would need an army of employees to supervise the water and food.

9123
CSO: 5000/4701

BRIEFS

REFORESTATION COMPENSATING FIRE DAMAGE--The Directorate of Forest Services of the Ministry of Natural Resources is nearing the end of its nationwide campaign of reforestation for 1981. It needs only to complete the planting of 500 trees in 2 hectares of the green belt surrounding the capital. In the country's interior the reforestation campaign includes the Gabu, Oio and Cacheu areas. Each of these areas has a nursery, that of Oio being the largest and in operation since 1975 in N'Bunhe, 7 km from Bissora. The Gabu area was the least protected, through lack of transportation equipment, whereas the Oio area was the one with the greatest amount of reforestation, now having more than 100,000 new trees. About 30,000 were planted in Gabu. The reforestation campaign is aimed at reestablishing the ecological balance seriously threatened by fires which destroy thousands of hectares of forest each year. The seedlings are planted in the dry season, and transplanting begins in July and, with the rains, the new plants gain the strength necessary for growth. This biggest concern of the Directorate of Forest Services at present is maintaining the new plantings. Therefore, the directorate plans, through the Ministry of Education, to recruit students for the job of weeding to prevent the spread of any fire which might occur in the reforested areas. [Text] [Bissau NO PINTCHA in Portuguese 23 Sep 81 p 3] 8568

CSO: 5000/5608

BAIXO LIMPOPO FLOODS AFFECT AGRICULTURE

Maputo NOTICIAS in Portuguese 6 Oct 81 p 3

[Text] A large part of the land belonging to state enterprises and cooperatives in Baixo Limpopo has been flooded by recent rains, a condition made worse by poor drainage. One ditch is now discharging through an excavation made two weeks ago. Until that time, the water could not pass through to the river because of an obstruction in the piping system of the aqueduct constructed on the ditch of the Xai-Xai-Chibuto highway.

The Limpopo Valley area, located north of Xai-Xai and comprouising a surface area of 10,000 hectares, is drained principally by the Umbapi ditch, about 10 km long, and the Ponela collector, both having a discharge capacity estimated at 13 cubic meters per second when the current is strong. The two ditches have their floodgates at a section of the Limpopo River located 3 km from the city.

"Umbapi is the principal collector inasmuch as it traverses the lowest part of the valley. We are now opening a section which will connect this ditch with the Ponela ditch to obtain a greater runoff of the water," Engineer Humberto Boer told the Radio Mozambique staff.

"The question of drainage ditches in Baixo Limpopo has been taken lightly by enterprises and organizations directly affected," he continued. Thus, most of the farms do not have a single drainage ditch, and the few which exist have not been maintained for years. This is one reason the water from the torrential rains which fell up to 13 September and which are in fact abnormal for this time of the year has remained on a large area of the land.

According to the engineer, improvement of the drainage ditches will begin as soon as the water level returns to normal.

"With regard to the Umbapi collector, we are no longer thinking about repairing the piping system but rather of building a bridge. Moreover, we shall use part of our equipment to remove any obstructing material, that is, to clean the main ditches. It is obvious that part of the cleanup work will have to be done manually and, in this case, the people--at least of the cooperative farms located between here and Inhamissa--should participate. At the Marien N'Gouabi Agricultural Cooperative this work is already being done by members of the cooperative," Humberto Boer said.

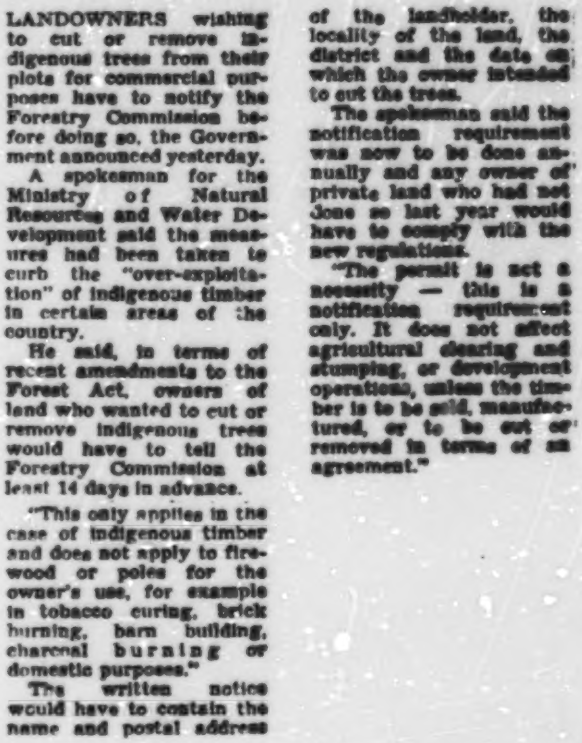
The director of the irrigation system said that opening and maintaining drainage ditches is not part of the organization's responsibility. "This work was part of our responsibility until 1979, but from that time on our instructions are to build and maintain the irrigation system. Thus, the opening and maintenance of drainage ditches is not our responsibility. However, with the flood situation, which has already stopped our work for one month, we feel obligated to do something," he said.

8568
CSO: 5000/5608

GOVERNMENT ORDERS CLAMPDOWN ON CUTTING TIMBER

Salisbury THE HERALD in English 28 Oct 81 p 6

[Text]



LANDOWNERS wishing to cut or remove indigenous trees from their plots for commercial purposes have to notify the Forestry Commission before doing so, the Government announced yesterday.

A spokesman for the Ministry of Natural Resources and Water Development said the measures had been taken to curb the "over-exploitation" of indigenous timber in certain areas of the country.

He said, in terms of recent amendments to the Forest Act, owners of land who wanted to cut or remove indigenous trees would have to tell the Forestry Commission at least 14 days in advance.

"This only applies in the case of indigenous timber and does not apply to firewood or poles for the owner's use, for example in tobacco curing, brick burning, barn building, charcoal burning or domestic purposes."

The written notice would have to contain the name and postal address of the landholder, the locality of the land, the district and the date on which the owner intended to cut the trees.

The spokesman said the notification requirement was now to be done annually and any owner of private land who had not done so last year would have to comply with the new regulations.

"The permit is not a necessity — this is a notification requirement only. It does not affect agricultural clearing and stumping, or development operations, unless the timber is to be sold, manufactured, or to be cut or removed in terms of an agreement."

CSO: 3000/5609

EARTHQUAKE PREDICTION EFFORTS COORDINATED IN TAJIKISTAN

Dushanbe KOMMUNIST TADZHIKISTANA in Russian 27 Sep 81 p 4

[Article by O. Sobolev, correspondent of TADZHIKTA: "Accurate Prediction of Earthquakes"]

[Text] The seismology scientists of the socialist countries have worked out a program of joint research for the next 4 years. It was adopted at the conference of the commission on scientific cooperation of the academies of sciences of these countries on planetary geophysics which ended on 25 September.

"The unification of efforts to solve the problem of accurate prediction of earthquakes, one of the most threatening phenomena of nature, is very timely, "said the head of the Soviet delegation Hero of Socialist Labor, Lenin and USSR State Prize laureate, Academician Mikhail Aleksandrovich Sadovskiy in commenting on the results of the commission's work. "The underground element has brought great misfortune to many countries until now, and it is very important to learn to accurately and opportunely warn people about imminent strong shocks."

The largest scientific institutions in the USSR are involved in this problem, including the Institute of Earth Physics and the Institute of Geochemistry of the USSR Academy of Sciences, the All-Union Institute of Mineral Raw Materials, and many others. The regional center of the Central Asian seismological service, the Institute of Seismically-Stable Construction and Seismology of the Tajikistan Academy of Sciences is working in close contact with them. It is now beginning to coordinate the research planned at the conference. This selection was not accidental. The Tajikistan scientists have created a major network of seismic stations and observatories, have accumulated experience in collecting and processing data on ready underground shocks, and have compiled detailed seismic maps. This already makes it possible to judge the seismic situation in the region and to reliably construct power engineering, industrial and civic facilities in the seismically active zones, that is, the basis for a future system of earthquake prediction is available.

It is very important to use the experience of the colleagues who are working in the European region, the achievements of the socialist countries in developing the latest instruments and automated systems, and methods of processing data of scientific observations when formulating methods of accurate prediction of the time and place of strong earthquakes. The exchange of scientific information that took place at the conference will bring us closer to the desired goal.

9035
CSO: 5000/2

RESTORATION OF MUD-DAMAGED LAKE ISSYK BEGINS

Moscow PRAVDA in Russian 5 Aug 81 p 6

[Article by L. Spektor, outside correspondent of PRAVDA: "Born Twice"]

[Text] Work has begun to restore Lake Issyk.

"Jewel of the south" and "mountain miracle" are names given to the lake of rare beauty that overflowed in the branches of Tyan'-Shan', 50 kilometers from Alma-Ata. People were attracted here by the stately mountains with century-old spruce, shores overgrown with bushes, and clear air. The most picturesque corner of the Zailiyskiy Alatau became a vacation spot for the citizens.

Researchers have established that the lake was born 8,000-9,000 years ago. A powerful rock landslide partitioned off the rapid river flowing out from a deep gorge. A lake was formed on the 50-hectare resulting dish. The lake was up to 300 meters deep and there was no more beautiful a lake around. Many people came to its shores to admire the mirror surface which reflected both the high sky and the trunks of the century-old trees. The forest inhabitants blazed paths here to drink of the spring water.

The catastrophe occurred 18 years ago. A threatening mud flow developed on 7 July 1963 high in the mountains. Gathering strength, the avalanche of mud and rocks rushed into the gorge. A wave as high as a 12-story house fell into the lake. The ancient dam was destroyed by the mighty impact and a 400-meter wide gap was formed. About 15 million cubic meters of clear water "leaked" through it in the counted minutes. The stream destroyed everything that grew around.

It appeared that the "mountain miracle" had died forever for man. But the specialists nurtured plans to restore the lake. It was first suggested that the safety of the neighboring villages and city of Issyk be guaranteed from the streams that could fall on them. The plan intends, without damaging the lake, to use its waters to irrigate fields. And finally, it is planned to turn this wonderful corner of nature into a vacation spot once more.

The plan has begun to be implemented these days. We are going to the Issyk valley together with the first deputy head of the Kazglavselezashchita A. Khegay . Aleksy Yur'yevich is an experienced specialist in the construction of anti-mud flow structures. He participated in making the dam near the high-mountain roll in the Medeo area. He speaks enthusiastically about the imminent work on the way. It is planned to build a hydrosystem with a dam, tunnel and anti-mud flow structures.

Here is the former lake. The last time I was here was the day before its disappearance and I saw a unique beauty. Now instead of the mirror-like surface there is a hardened mass of silt and sand, boulders scattered in disorder, and steep shores that are exposed to the very granite. Only the rapid mountain stream, like a century ago, continues its course.

The noise of the running water now merges with the roar of the air hammers. A water-drainage tunnel has begun to be laid in the rocky mountain. It is 2 meters in diameter and a kilometer long. A little to the side, the excavator buckets bite into the ground. A filled dam over 50 meters high will rise here instead of the gaping, wide wash-out.

We walk upwards over the river bed. A strange structure sticks out of the water. It looks like a bookstand assembled from large beams which are not permanently fastened, but seem to be strung onto vertical steel axes. In the case of strong pressure from mud masses, the pyramide made of bookstands will cushion the impact, let the water through, and hold back the large rocks and tree trunks.

"Such a trap," A. Khegay notes, "will be able to hold back a mud stream of great power."

But when will the lake again gladden the citizens?

"In 1985, according to the plan. We are trying to keep within the schedules. Perhaps we will get ahead of them."

9035
CSO: 5000/2

COORDINATED EFFORTS CLEAN UP CASPIAN SEA

Baku VYSHKA in Russian 4 Aug 81 p 3

[Article by F. Akhundzade, head of the Azerbaijan basin administration to regulate the use of and protect the waters ("Kaspvodnadzor"): "The Caspian Will Become Cleaner"]

[Text] The "Main Directions for Economic and Social Development of the USSR for 1981-1985 and for the Period to 1990" adopted by the 26th CPSU Congress has a special section "Environmental Protection." It stipulates the allocation for these purposes of monetary resources by the ministries, departments and enterprises. This is a graphic example of the concern of the party and government for protection of man's environment.

For a reservoir such as the Caspian Sea which is unique in all respects, the USSR Council of Ministers took measures twice in the last decade to prevent its pollution. The decree adopted by the Azerbaijan Communist Party Central Committee and the Azerbaijan SSR Council of Ministers in 1978 provides for complete stopping of discharge of polluted water into the Caspian Sea before 1985.

Not only the leaders of the departments and enterprises have shown concern for environmental protection at this time. The citizens, collectives and all Soviet people have an understanding of the solution to this problem.

During the 10th Five-Year Plan, 89 water-protection and water-management facilities were built and put into operation in the republic. Their construction cost 188 million rubles. As a result, the volume of polluted effluent discharged into the sea was reduced by 105,000 cubic meters per day as compared to 1975. The degree of contamination of the Caspian waters with petroleum products in intensive industrial regions such as Sumgait beaches and Neftyanyye Kamni was reduced 10-fold.

There is no doubt that many are interested in the Baku bay. Improvement in the water area of the bay is primarily linked to a halting of waste water discharge into it. It should be said at once that this problem is being successfully resolved. A municipal sewer system with biological treatment works with output of the first phase of 600,000 m^3 per day is currently under construction. The start-up of the first phase of the treatment works will send the communal effluent on a collector to the treatment works.

The Permanent Commission for Environmental Protection of the Azerbaijan SSR Supreme Soviet last year examined the question of measures to purify the bay of the accumulated contaminated silt. A number of organizations and institutes are currently making a thorough study of this problem and formulating the appropriate measures.

The oil workers have done a lot in the past years to protect the Caspian Sea. All the casing head-formation water extracted with the oil is pumped into underground levels for recovery and maintenance of the formation pressure. The newly built offshore platforms have hermetically-sealed metal flooring.

It cannot be forgotten at the same time that all the facilities of the offshore oil workers are located directly on the sea. This circumstance gives especial acuteness to observance and fulfillment of the fundamentals of water legislation.

The problem of taking ballast water from fleet tankers has been completely resolved by the Caspian Sea Steamship Company. Taking of communal effluent from the fleet ships with its subsequent transfer to the municipal sewer system has been set up in the Baku marine port. It is gratifying that the Caspian Steamship Company has set up an emergency service to eliminate consequences of large oil spills by the tanker fleet. This service is currently being supplied with equipment, special ships and chemical reagents. In the very near future our republic will have all the technical resources to eliminate the consequences of large oil spills at sea, if they occur.

At the same time the following circumstance is alarming. The Baku seaport has four oil collectors, however they do not operate satisfactorily since the management of the Caspian Steamship Company does not pay proper attention to their operation. One hundred and twenty-five sets of equipment for air cooling with total cooling surface of 532,000 m^2 were installed and put into operation during the last five-year plan at the oil refineries. This reduced water consumption by 135,000 m^3 per day. A waste-free water cooling system was set up at the plant "Neftegaz." Construction and start-up of biological purification works with return of the purified water to the circulating system are stipulated in the 11th Five-Year Plan at the oil refining industry enterprises. After their start-up, discharge of waste water into the bay by the oil refining enterprises will stop.

Construction of circulating water supply systems is of primary importance not only for a reduction of waste water discharge and decrease in contamination of the Caspian, but also for a significant saving of drinking water.

Start-up of a circulating system in the association "Khimprom" was stipulated, in particular, back in 1979. The schedules for introduction of this important facility have been interrupted however.

In our opinion, the Sumgait industrial region needs more radical measures since the chemical enterprises have more harmful waste water, than for example, the enterprises of machine construction, light and food industry. Creation of a general system for purification of waste water of the entire industrial complex would be the most correct solution for Sumgait.

The "Main Directions for Economic and Social Development of the USSR for 1981-1985 and for the Period to 1990" state: "Accelerate construction of water-protection facilities in the basins of the Black, Azov, Baltic and Caspian Seas. Increase the output of the circulating and re-use of water systems, develop and introduce at the enterprises waste-free water-use systems."

The successful resolution of these problems will permit the Caspian to retain its cleanliness for our progeny as well.

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MORE CLEAN WATER MEASURES NEEDED IN KAZAKH SSR

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 10 Jul 81 p 4

[Article by Ya. Klevanov, chief state sanitary physician of the Kazakh SSR, deputy minister of public health of the Kazakh SSR: "Screen for Harmful Effluent"]

[Text] Man has settled close to open water since ancient times, and his well-being has directly depended on the distance to the river and the lake. This dependence has noticeably weakened with time. Canals, water pipes, deep drilling, etc. appeared. The need for water, on the contrary, rose with the development of industry and various sectors of the economy and daily life. There was a corresponding increase in the quantity of wastes of vital activity, chemical preparations, metals, biological substances, etc. which enter the reservoirs with the used water. It became necessary to protect them from harmful effluent and to preserve their cleanliness for ourselves and our progeny.

Our country is focusing enormous attention on this problem through party, soviet and economic agencies.

Comrade L. I. Brezhnev indicated: "Taking measures to accelerate scientific and technical progress, it is necessary to do everything so that it is combined with a thrifty attitude to natural resources and is not the source of dangerous pollution of air and water. Not only we, but the subsequent generations must have the opportunity to enjoy all the benefits given to us by the excellent nature of our motherland." The Main Directions for development of the country which were approved by the 26th CPSU Congress also state: "Improve protection of the water sources, including small rivers and lakes, from depletion and pollution."

Protection of the open reservoirs in our republic with its vast arid zones acquires special importance. It is no accident that in recent years the Kazakhstan Communist Party Central Committee and the government of the Kazakh SSR have adopted a number of decrees aimed at improving the sanitary condition of the reservoirs. The republic's Ministry of Public Health jointly with other ministries and departments have worked out comprehensive plans to guarantee cleanliness of the rivers and lakes.

The republic in recent years has set up a system of constant observation of reservoirs, detection of the main sources of pollution, and has been more persistent in halting discharge of untreated industrial and household effluent into the rivers and lakes. Over 380 million rubles were allocated for construction of water treatment facilities in the last five-year plan. This made it possible, in particular, to reduce the discharge into reservoirs of waste water by 2-fold and to eliminate 17 sources of pollution.

The waste waters of Alma-Ata, Tselinograd and a number of other cities are currently sent through biological treatment. A number of facilities for this treatment are at the construction stage. Measures which have been taken have resulted in an improvement in the sanitary condition of the Ishim, Tobol, Ural Rivers, the Caspian Sea and many lakes and ponds. The quality of their water and its correspondence to the GOST requirements have improved.

Work to protect the reservoirs from contamination requires further improvement however. Last year in the republic, more than half of the sources of production and household waters either did not have any treatment, or it did not meet the sanitary requirements. This situation is characteristic for the East Kazakhstanskaya Oblast, where the Irtysh River is contaminated by production wastes of a number of enterprises of nonferrous metallurgy, as well as for other oblasts.

One of the basic reasons for these shortcomings is the slow construction of the water-protection facilities. Their start-up noticeably lags behind expansion of the volumes of main production of the enterprises. The state allocates significant resources for the creation of treatment works, however, they are not assimilated. For example, the Kazakh SSR Ministry of Residential and Communal Services last year only assimilated half of the allocated R 920,000 for the reconstruction of a canal to divert effluent into Sary-Bulak Lake in the Alma-Atinskaya Oblast. The same percentage of assimilation was "reached" in construction of the important treatment facilities of the ministry of Internal Affairs and the industry of construction materials, the Ministry of Light Industry and the Ministry of Heavy and Transport Machine Building of the republic. The schedules for start-up of the water protection structures at the Ust'-Kamenogorsk lead-zinc and titanium-magnesium kombinats, and other enterprises of the Ministry of Nonferrous Metallurgy were interrupted.

The Ministry of the Meat and Dairy Industry, and the Administration of the West Kazakhstan Railroad are poorly developing this work at their enterprises.

Another, no less important reason for pollution of the reservoirs is the poor operation of the active treatment equipment and the lack of efficient control over its running. This has permitted accidental discharges of industrial and household effluent on the territory adjacent to Alma-Ata, Kustanay, Chimkent and other cities as well as into the neighboring reservoirs in the last 3 years. The people's controllers of the enterprises must play a more active role in preventing these situations. The local soviet and economic agencies must react more quickly to the materials presented by the sanitary-epidemiological services.

It appears that for a more effective solution to these questions it would be expedient to set up unified centers for organization of planned-regular treatment in the major cities.

In Alma-Ata, for example, the most diverse organizations and institutions are now engaged in purification: the city administration for public welfare, the rayon committees for public welfare, the rayon housing administration and other departments. This separation prevents harmony in the schedules and plans for the important measures of treatment and the implementation of proper control over this work.

There are other shortcomings in the organization of sanitary measures in Alma-Ata and in the capital oblast. In particular, individual house-buildings in populated areas located on the shores of the Kapchagay reservoir have not switched to the apartment system of purification. The question has not yet been resolved of allocating a new section for the Alma-Ata city dump, while the already existing dump has already "approached" 250 meters towards the microregion "Dorozhnik" (instead of the assumed 1,000 meters).

All of this has had a negative effect on the sanitary-hygienic condition of the Kapchagay reservoir. It is the main recreation area for the residents of Alma-Ata and the oblast. There is a level of bacterial contamination here which exceeds the permissible standards.

The sanitary regime of the Syrdar'ya River has drastically deteriorated in recent years. The dry residue of its water has doubled in the last 10 years. Its pollution often exceeds the sanitary standards, while the natural flow of the river has diminished in this period 5-7-fold because of regulation by the Chardara and Toktogul reservoirs. This, naturally, diminished the self-purifying capacity of the reservoir.

The acuteness of the problem can be reduced, however, through sanitary outlet of water from these reservoirs, as well as by reconstruction and reorganization of the irrigation systems on the river banks and broad introduction of advanced irrigation methods. Glavrissovkhozstroy should be primarily involved in the specific resolution of these problems.

If we talk about the problem of maintaining the cleanliness of the republic reservoirs as a whole, then all the possibilities to resolve it are available. A broad network has been set up of active treatment works, resources have been allocated for construction of new ones, and rich experience has been accumulated. It is now a matter of specific implementers and organization of practical work.

It is most important in this case to unite the efforts of the interested ministries and departments, and to introduce into practice the construction of treatment works based on a percentage participation of the enterprises, as well as to use other progressive methods.

The tasks set by the 26th CPSU Congress and the 15th Congress of the Kazakhstan Communist Party for environmental protection, in particular of open reservoirs, are complicated but feasible. They need to be solved not in the future, but here and now.

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CLEAN YENISEY RIVER PROGRAM INITIATED

Moscow GUDOK in Russian 2 Sep 81 p 4

[Article by B. Ivanov: "Program of 'Clean Yenisey'"]

[Text] The Yenisey basin which is included among the 10 largest rivers on the planet, is an enormous region of intensive industrial development. On the threshold of this decade, the Siberian scientists developed a large-scale program "Clean Yenisey,"

What caused it? The Novosti press agency correspondent receives an answer to this question from the specialists.

I. Gitel'zon, corresponding member of the USSR Academy of Sciences:

"Even now almost half of the earth's population is feeling a shortage of clean water. This is an alarming symptom, a convincing proof that man by his economic activity is bringing himself closer to that time when the water crisis on the planet will become just as acute as the energy crisis.

The "Clean Yenisey" program is called upon first to coordinate the efforts of many groups of scientists and practitioners to keep the waters of the river clean. It will first be necessary to make an ecological-mathematical prediction of the region's economic development. The water is currently used in many ways, and the interests of the consumers often conflict. But all of them first of all require clean water. Consequently, we can only preserve the ecological equilibrium of the water system by working together.

The experience of the builders of the first Krasnoyarsk GES on the Yenisey with output of 6 million kW is instructive. Its construction was completed in 1972.

The constructed concrete dam, 127 meters high, was a reliable protection from fatal floodings. The gas composition of the water was changed for the better: it became richer in oxygen. New areas of irrigated land appeared and the boundaries of shipping were expanded. In a word, there were many positive factors. However, below the dam, the Yenisey ceased to be covered with ice for a distance of more than 300 km, even in the severe Siberian frosts. The hydraulic engineers could not foresee this since the GES of this output was built for the first time in world practice.

The open water noticeably altered the climate in the region and increased the air humidity. The new program provides for plans which will be able to return the river to its previous condition, and consequently, restore the natural equilibrium. The specialists are taking into consideration the experience of the Krasnoyarsk GES in preparing to build new and powerful stations on the Yenisey, Sayno-Sushenskiy, Sredne-Yenisey, Turukhanskiy, Igarskiy and others.

The industrial enterprises located on the Yenisey now have reliable treatment works in operation. The program nevertheless stipulates switching all the enterprises in this decade to closed water-supply. This will reliably protect the river from industrial pollution."

N. Bakhtin, director of the zonal administration of the Siberian observatory of hydrometeorology and control of the environment:

"We who live on the shores of the Yenisey and its 20,000 tributaries, and this is over 3.5 million people, consider ourselves to have the greatest water supply in the country, which has excellent taste qualities.

Even without seeing, but only becoming acquainted with the "calling card" of the Yenisey one can judge its potential power. The river extends 4,100 km from south to north. On this course it does not simply traverse through the natural-climate zones of Central Siberia, from the mountain forest to the tundra, but fulfills the role of a unique Gulf Stream, a powerful heater which has received a solid thermal charge in its southern course. Every second the river gives 17,000 m^3 of water to the North Arctic Ocean. This is double the potentiality of the Volga. The total annual run-off of the Yenisey system is one-fifth of all the water resources of our country's rivers. The energy potential of the Yenisey is colossal. It is estimated at 600 billion kW-h, that is, about 30 hydroelectric power plants like the Krasnoyarsk can be built here."

S. Fomin, head of the Yenisey river steamship company:

"The total length of the water mains of the Yenisey system that is suitable for shipping is 10,000 km. Our annual navigation under conditions of the harsh Siberian climate only lasts about 140 days. The time is short and the tasks are great. This is why, by constantly increasing the intensity of traffic and the tonnage of the shipments, the steamship company succeeds in deliverying to its customers over 21 million T of different freight, of which one-third is lumber.

During the last decade, we equipped all the ships, and there are about 1,300 of them, with units for waste recovery. Eleven centers to collect fuel residues and garbage have been set up in different areas of the basin. Their number will rise in the near future. However, whereas in this respect the threat of water pollution has been reduced to zero, the problem of shipping lumber has not been absolutely resolved. We transport a considerable part of it on rafts. According to the "Clean Yenisey" program, the steamship company will receive from the ship-builders the necessary number of barges in the near future. This will allow us to eliminate pollution of the river which is inevitable in floating logs."

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SURA RIVER POLLUTION DEPLORED

Moscow SOVETSKAYA ROSSIYA in Russian 26 Aug 81 p 2

[Article by N. Demidov, our special correspondent: "Dark Waters of the Clear Meadow"]

[Text] The misfortune occurred unexpectedly. Until now the enterprises had not discharged such a quantity of pollutants into the Sura which unhurriedly rolls over the Penza land. It was as though a volley hit the river. The fish suffocated and became sick. Then the Aspius aspius disappeared. Some remember those times here when people used to go with fishing rods to the Sura shores for the dainty sterlet. There are no more sterlet, because like the Aspius aspius they like very clean water.

"Mass death of fish occurred in the river 16 years ago," relates the senior state inspector of fish protection for the Penzenskaya Oblast N. I. Polosin. "The plant of medical preparations and certain other industrial enterprises discharged a large dose of production wastes into the Sura. The river still cannot set itself right from what happened. Pollution of the river continues. See for yourself."

We set out from the sources of the Sura along its course together with specialists of the Penza hydrochemical laboratory of the RSFSR Ministry of Land Reclamation and Water Resources, the oblast inspection of fish protection and the sanitary-epidemiological medical station.

The twisting rivulets rush towards the Sura just like blue veins on a hand. I. N. Baranov, inspector of fish protection, knows every one of them. The small rivulets are the Staritsa, Vyaz' and Uza. But they give strength to their older sister. Unfortunately it is not only fed by water. Even at this place, almost at the upper reaches, the river is polluted above any standards. The city of Kuznetsk alone spills thousands of cubic meters of untreated effluent here every day.

According to the data of the Penza hydrochemical laboratory of the RSFSR Ministry of Land Reclamation and Water Resources, 63% of the waste water discharged every day is not sufficiently purified.

What is the essence of the problem? It is the fact that a whole group of enterprises of industry and agriculture operate in an old fashion. Their leaders are generally only concerned with fulfilling the plan and forget about environmental protection measures. How else to explain the fact that none of the alcohol plants in the oblast has any treatment works at all. We did not see any specific, substantiated plans there for construction of water-protection facilities.

The major polluter of the Sura remains TETs-1. Analysis showed at the site where it stands that the content of suspended particles in the water exceeds the standard. Not only the sterlet, but also the simple roach would die here. The enterprise is not concerned at all. In such situations they sometimes respond: "We have no means." The construction of treatment works in the production association "Penzakompressormash" is postponed from year to year because of a lack of financing. Despite this, the planning documents have been available for a long time.

Other enterprises have compiled plans for water protection, and they have the money, but still the situation is stalemated. In the association "Penztekstil'mash" the treatment works were built back in 1966. But they have been abandoned now and they are in an extremely unsatisfactory condition.

The agricultural enterprises are a cause of great concern. They do not have water-protection structures. Such economically large kolkhozes as "Vpered k kommunizmu," "Rossiya," of the Lunino region have a powerful material and technical base. But the animal husbandry complexes that were built according to modern plans, for some reason do not have treatment facilities. Other farms in the association "Svinoprom" also do not have them.

Perhaps the oblast interkolkhoz construction association would give perceptible help to the oblast farms? Hardly. The polluted effluent from the hydrolytic industry of the Kaladinskiy experimental lumber kombinat of the RSFSR Ministry of Foresty has been dumped into the Teshnyar' River, a tributary of the Sura, without treatment for a long time. At the same time, the lack of treatment works holds up start-up of facilities to produce 3,000 T of protein yeasts per year which are extremely necessary for the oblast agriculture. The start-up schedule for the facilities was 1979.

It cannot be said that construction of treatment works is not underway anywhere in the oblast. They have been erected in recent years at the plant "Mayak revolyutsii," the Kamenskiy meat kombinat, the Sura cloth kombinat "Krasnyy Oktaybr'." However, what is the benefit of this when the neighboring enterprises and farms pour their discharges into the purified water? It happens that on some sections the river is protected from pollution, while nearby it is given a new volley of production wastes. An entire complex of measures is needed to protect the waters. It is difficult to preserve the reservoirs alone.

It is characteristic that the water-protection facilities at many enterprises are not in suitable condition because of incorrect operation. Quite recently there was an erosion of the pins and waste water entered the Vyazovka River because of a lack of attention and negligence on the part of the specialists of the oblast's largest sovkhoz "Pankratovskiy." The result was mass death of fish, and damage totalling R 16,000. Of course the guilty parties were punished. But is this really the only problem?

According to the data of the oblast state inspection of fish protection, a whole series of cases of fish deaths were recorded in thelast five-year plan because of discharges of polluted effluent. The material damage to the state was about R 300,000.

How many fish this is. The moral side to the problem is no less important. For hundreds of years people have found the Sura shores to be a place for vacation, and have delighted in the picturesque places and the clean water. And now? The residents of Penza do not get much pleasure on the beaches. "Svetlyaya polyana" (Clear Meadow) is the channel reservoir of the Vyad' River. It is the recreation area of the city workers. But the water here is far from clear, because the Vasil'yevskiy poultry plant discharges untreated effluent nearby. Why does this not disturb the gorsovet?

The treatment works of the city itself are overloaded. What is not successfully "clarified" is emptied into the Sura through an emergency outlet, tens of thousands of cubic meters of dirty water.

A technical plan with estimated cost of R 17.6 million that was approved almost 5 years ago has been developed to expand the treatment works and the sewer system of Penza. How much has been assimilated by now? Only R 2 million. No significant changes are foreseen.

The situation is no better in other cities of the oblast. In Kuznetsk, where the misfortune of the Sura begins, capital for construction of water-protection facilities in the 10th Five-Year Plan was only assimilated by 4.5%, and in Serdobsk by 33. By the way, R 35,000 have been allocated for 1981 with estimated cost of the treatment works of over R 3 million. At such rates, the Serdoba River will be clean in exactly 100 years!

"It is not enough that the problem of the treatment works remains an acute problem," notes the deputy head of the Penza hydrochemical laboratory V. V. Anan'yev, "but the engineering-protective work on the Sura is going wretchedly."

A whole series of organizations control the condition of reservoirs in the oblast, primarily the state inspection of fish-protection, the hydrochemical laboratory, and the sanitary-epidemiological medical station. They apply stringent sancations to the violators and fine those guilty of polluting the rivers. In 6 months alone, 93 leaders and specialists of the enterprises have been deprived of bonuses. But can the situation be corrected with numbers alone?

"The oblast party organizations in recent years have strengthened attention to guaranteeing the proper protection of the reservoirs," we were told by the secretary of the Penza party obkom B. F. Zubkov. We clearly see the 'root of the evil' and are waging a relentless struggle to eradicate it. We are concerned with the fact that for many builders, the construction of treatment works, as they say, does not make the plan, there is a lot of 'unprofitable' earth-moving and installation work."

In the total volume of work to be done by the "Penzasel'stroy" of the RSFSR Ministry of Rural Construction, the water-protection facilities comprise less than 6%. But in the last 3 years the plans for their construction have not been fulfilled even once.

According to the data of the oblast statistical administration, the assimilation of capital investments for protection and efficient use of water resources at the oblast enterprises was:

20% at the Penza radio plant, 25% at the plant of medical preparations, 15% at the trust "Ptitseprom," and 9% at the plant "Krasnyy gigant." None of the 14 major enterprises has reached fulfillment of the plan even by half.

A question about the condition of the Sura and its basin was recently heard at the meeting of the RSFSR Committee of People's Control. The individuals responsible for polluting the waters were strictly punished. This problem will also be examined by the oblast people's controllers. Last year the CPSU obkom adopted a decree to set up a special committee on the Sura. It is a necessary and urgent matter. However, it still only exists on paper and has not reached practical steps. Everyone knows about the misfortune of small rivers. No one disputes that they need the most rapid and effective help. But, on the other hand, decisions have been made in the oblast to set up a committee, and this was lulling. Stagnation and inertia have extinguished the initiative.

It goes without saying that the water in the Sura has become somewhat cleaner in the last 2 years because of the energetic efforts of the enthusiasts at certain enterprises. But it is somewhat cleaner, not clean! This is why it is necessary to have specific and comprehensive measures for protection of the Sura and its basin. However, will the solution to the problem be the creation of such a committee only in the Penzenskaya Oblast? The river flows farther, through the Ul'yanovskaya Oblast, Mordovskaya and Chuvashskaya Autonomous Republics, falling into the Volga. So that the important tributary of the mother of Russian rivers is full and has clean water, an interoblast agency is needed which would coordinate the actions to protect the Sura over its entire course.

From the editor: Sharing concern for the Sura, SOVETSKAYA ROSSIYA appeals to the party, soviet agencies, and the leaders of the industrial and agricultural organizations of the Penzenskaya and Ul'yanovskaya Oblasts, the Mordovskaya and Chuvashskaya Autonomous Republics to discuss the possibility of creating a coordinating center and a committee on the Sura river. Only collective control over the fulfillment of water resources, and a collective solution to the problem of this river and its basin can be successful. The editorial staff is ready to participate in setting up the committee, taking upon itself the commitment to form the public opinion, and to fulfill the controlling functions. At the same time we invite the readers to share their opinions and suggestions on this question.

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KIRGHIZ GOVERNMENT RESOLVES TO CLEAN UP LAKE

Frunze SOVETSKAYA KIRGIZIYA in Russian 12 Sep 81 p 2

/Article: "So that the Issyk-Kul' Remains Blue"/

> /Text/ /The articles published in SOVETSKAYA KIRGIZIYA entitled "Problems of a Resort Town" (3 June 1981), "Around the Lake" (9 June 1981), and "The Lake Should Be Clean" (8 July 1981) evoked a large public response. The Kirghiz SSR Council of Ministers, after examining the newspaper's published articles, noted that the alarming facts set forth therein correctly reflect the state of affairs with regard to the environmental protection of the Issyk-Kul' area, and they reveal the causes which are hindering the full-valued rest and recreation of the working people. In an adopted resolution the republic's government has mandated the appropriate ministries and departments to step up their monitoring of the lake's protection, to apply the strictest measures to those guilty of polluting it. But what is actually being done along these lines? Let's analyze the responses which have been sent to the editors./ /in boldface/

According to information provided by the deputy chairman of the Issyk-Kul'skaya Oblast Soviet Ispolkom, E. Sadykov, shifting the centers of the livestock-raising areas is being conducted just as slowly as before. In only 36 out of 130 sanitation institutions are KU /Commission for Improvement/-type facilities operational, and only in 15 are they under construction. But what is the position taken by the oblispolkom itself in this matter? It is not clear from the letter. For example, the Kirghiz Republic Council on Tourism and Excursions noted that construction of a KU-200 purification facility has been started at the Ulan Tourist Center. Complete units of the KU-200 type have been brought to the Kyrchyn and Issyk-Kul' Tourist Centers, and the planning specifications have been prepared. But up to now the area of the Issyk-Kul' Tourist Center has not been legalized and does not measure up to the necessary sanitary-hygienic standards. Despite the acute need, the problem of its expansion has not been resolved. Nor has the question of the removal of the land section under the construction of the purification facility been implemented and resolved. And just who should supervise all these matters?

The Frunze Footwear Production Association responds that the plans and estimates for the Aist Rest and Recreation Center have been worked out, and construction has begun on the purification facilities at an estimated cost of 150,000 rubles. A number of projects have been carried out with respect to improvements and landscaping. The dining-room with a seating capacity of 350 has been modernized, as well as individual residential cottages and other areas. The association's management has undertaken measures to prepare this rest and recreation center in time for the new season.

For the Asel' Sports-Hygiene Camp of the Kirghiz Women's Pedagogical Institute the cost-accounting group of the Issyk-Kul' Rayispolkom has worked out the architectural and planning assignments for the design and construction of the KU-200 local purification facilities. In accordance with a decision by the Kirghiz SSR Gosstroy, Kirgizkommunproyekt has planned the attachment of a compact unit for purifying the waste water, as well as the improvement and landscaping of the institute's sports-hygiene camp. The republic's Ministry of Higher and Secondary Specialized Education is considering the question of working out planning estimates for the KU-200 facility and the construction of the camp.

However, the Ministries of Trade, Housing and Municipal Services, Construction, Construction Materials Industry, Motor-Transport and Roads, Food Industry, the Kirghiz Consumers' Union, and the State Committee for Agricultural Equipment have still not done enough to prevent the pollution of the Issyk-Kul' Lake Basin. For example, the fact that until this day the town of Rybach'ye has a sewer system operating in accordance with a simplified schema is primarily the fault, in the opinion of the Issyk-Kul' oblispolkom, of the Ministry of Construction and the Ministry of Housing and Municipal Services.

But the fact is that in Przheval'sk itself to this very day they have not put municipal-type purification facilities into operation, although the state commission's act concerning their adoption was signed as far back as the beginning of the current year. Every year the Ministry of the Meat and Dairy Industry interrupts the task of modernizing the purification facilities. During the present year 230,000 rubles were earmarked for this purpose, but they have not been utilized. And what lies behind this sentence from a response by the deputy minister of the Meat and Dairy Industry, D. Chokoyeva, to the editors: "We are constantly monitoring the operation of the purification facilities of enterprises which are located in the Issyk-Kul' zone"? The deputy chairman of the oblispolkom, Comrade Sadykov, has also informed us that the decision has been made to allocate in the town of Cholpon-Ata an area right near the hydro-chemical laboratory. All the trouble was that this decision had been suspended in mid-air.

"In order to carry it out," states the chairman of the Cholpon-Ata Gorispolkom, B. Tursunaliyev, "we must build up this area and receive the proper limits for this purpose...."

The Ministry of the Meat and Dairy Industry, in turn, has informed us that the purification facilities at the Anan'yevskiy Cheese-Making Plant will begin to function effectively only at the end of the current year, when the ventilating fans, which are in short supply, are installed. Operation of the Przheval'skiy Slaughterhouse and Sausage-Making Center has still not been set aside. In the response, unfortunately, there was no thorough analysis of the work of the PKTB /Planning and Design Technical Office/, in accordance with whose plans the purification facilities are being built, and, as has become obvious from practice, the time requirements have not always been taken into consideration.

The deputy minister of agriculture of the Kirghiz SSR, A. Bersenev, explains the reason for the slow shifting away from the lake shores and river banks of the livestock-raising farms, sheep pens, and purchase points by the unsatisfactory work of the contractual construction organizations. But what about the role being played by the ministry itself in the expansion of this problem?

A pro forma written answer was sent to the editors by the chief engineer of the Kirgizavtotekhobsluzhivaniye Republic Production Association, V. Danilov. He considered it feasible to inform us that a standard technical-services station had been put into operation in Przheval'sk as far back as 1974 and that it, he says, is producing technical services and other operations. Yes, so it should be, although correspondence published in the pages of this newspaper has irrefutably proved that this station is not functioning. Could it be that the necessary measures were adopted very recently? No, unfortunately not. As the Issyk-Kul' State Water Inspection Office has informed us, the system of circulating water supply does not operate with the purification facilities to this very day.

The manager of the Issyk-Kul'stroy Trust of the Kirghiz SSR Ministry of Construction, V. Galchev, has assured the editors that the idea of creating a specialized construction and installation administration in the Issyk-Kul' area for the purpose of building communal-type projects (purification facilities, collectors, water drainpipes, etc.) has been approved. But, you know, it is high time to make the transition to its practical implementation! What is the opinion of the ministry itself on this score?

The responses to the editors' inquiries also speak about the fact that at the Ulan Tourist Center the first stage of a new dining-room with a seating capacity of 300 has been put on line and is functioning. Also that the Kirgizdortransproyekt Planning Institute, as the Ministry of Motor Transport and Roads has informed us, is drawing up the plans for a passenger-car center in the town of Cholpon Ata for a capacity of 150 automobiles. Construction of the passenger-car center is provided for inclusion within the capital-investment plan of the 11th Five-Year Plan. The Kirghiz SSR Minister of Trade writes that capital investments are being channeled primarily into the construction of a fruit center, warehouses, including foodstuff warehouses in the towns of Cholpon-Ata and Rybach'ye. All this, of course, is fine. But here now the funds for building stores, restaurants, and dining-rooms at the expense of deductions from housing construction are being earmarked and utilized by the Cholpon-Ata Gorispolkom in an obviously unsatisfactory manner.

Of course, here and there some things are being accomplished. At the Ak-Chardak boarding facility and the Burevestnik Pioneer Camp repairs and construction work have been carried out on all cottages (camp-sites), a well has been drilled for everyday needs, four temporary cabins have been removed, a separation has been made in the pipeline in order to water the entire area with fountains, five Skazka-type cabins have been built, etc.

But, as may be seen from the responses sent by various departments, the health-resort town of Cholpon-Ata and the entire Issyk-Kul' area still have quite a few problems which require the most rapid possible solution. They must be tackled now, without waiting for the start of the new season.

This zone, which has been proclaimed an All-Union health resort, must fully measure up to its own intended purpose. In answering for the purity of the lake, for its waters remaining blue, the entire republic, all departments and local authorities are called upon to constantly and effectively monitor the preservation of the environmental purity, to guarantee the unconditional execution of the appropriate tasks which have been specified by this republic's CP CC and by the Kirghiz SSR Council of Ministers.

And now, when the summer-autumn recreational season is coming to an end, and when there are fewer people on the shores of the Issyk-Kul', is the best time to tackle this matter in earnest. The lake can and must remain pure!

2384
CSO: 1830/17

GEORGIAN WATER-PROTECTION VIOLATORS WARNED

Tbilisi ZARYA VOSTOKA in Russian 2 Sep 81 p 1

[Article from GruzINFORM: "For Cleanliness of the Republic Reservoirs"]

[Text] The basins of the Black, Azov and Caspian Seas are being polluted much less from the Georgian territory thanks to the implementation of a comprehensive environmental protection program planned by the party and government. To execute the decrees of the all-union directive agencies, in the last five-year plan alone sewage system structures were started up in the cities of Gagra, Pitsunda, Samtredia, Tskhaltubo, Batumi, Kutaisi and Chiatura with total output of 286,000 m^3 of waste water per day, including 140,000 m^3 per day for biological treatment.

At the same time, the Georgian Communist Party Central Committee, after examining the question of the course of fulfillment of the appropriate decrees on protecting the basins of the Black, Azov and Caspian Seas from pollution, noted that the sanitary condition of the republic reservoirs and the coastal zone of the Black Sea in limits of the Georgian SSR still remains unsatisfactory because of the continuing discharge of a large volume of waste water.

Construction of the sewer system structures was not completed in 1976-1980 in 10 of the 16 cities and population centers stipulated by the decree, including Poti, Gudauta, Novyy Afon, Makharadze, Kobuleti, Tsakhaya, Borzhomi, Lanchukhti, Abastumani and Dzhava. As a consequence of the incomplete development of the sewage system network, none of the republic cities has completely stopped discharging untreated waste water.

The assignments have not been fulfilled for stopping discharge of untreated waste water by the Zestafoni plant of ferroalloys, the Kutaisi automotive plant, the Sukhumi and Poti marine trade ports of the Georgian marine steamship company, the Gardabani cannery of the Georgian SSR Ministry of the Fruit and Vegetable Industry, the Tbilisi hosiery plant of the Georgian SSR Ministry of the Light Industry, the Telavi shale-marble kombinat of the Georgian SSR Ministry of Construction Materials Industry, the Tsnori passenger autotransportation enterprise of the Georgian SSR Ministry of Automobile Transportation and the Tbilisi Scientific Research Institute of Vaccines and Sera of the USSR Ministry of Public Health.

Capital investments totalling 23.4 million rubles were not assimilated during the 10th Five-Year Plan because of the low rates of construction of water-protection facilities.

Gross violations of the operating regulations have caused the malfunctioning of the treatment works in a number of facilities of the Georgian SSR Ministry of Public Health, the Bolnisi and Tsiteli-Tskaro regional hospitals, the tuberculosis sanatorium in Tsemi, the industrial association of the Georgian SSR "Samtrest": the Manavskiy, Kindzmaraul'skiy and Ikaltoyskiy wineries, of Tsekavshiri; the Bolnisi bread kombinat, of the Georgian SSR Ministry of Construction Materials Industry: the Gardabani cardboard roofing material plant, Liloyskiy kombinat of construction materials, of the Georgian SSR Ministry of the Fruit and Vegetable Industry: Tamarisskiy and Marabdinskiy canneries.

A number of ministries and departments are accepting incomplete treatment works for operation.

The Georgian SSR Ministry of Residential and Communal Services and the ispolkoms of the soviets of people's deputies of the cities and regions do not guarantee effective operation of the treatment works and do not provide them with skilled service personnel. Sufficient capital and mechanisms are not allocated for the repair of the treatment works.

The Georgian Communist Party Central Committee and the Georgian SSR Council of Ministers consider the fulfillment of measures to stop discharge of untreated waste water into the republic reservoirs to be unsatisfactory. These measures were stipulated by the decrees of the directive agencies.

The attention of the Abkhazskiy, Adzharskiy and Yugo-Osetinskiy party obkoms, the councils of ministers of the Abkhazskaya ASSR and the Adzharskaya ASSR, the ispolkom of the soviet of people's deputies of the Yugo-Osetinskaya AO, the Tbilisi, Rustavi and Poti party gorkoms and ispolkoms of the corresponding city soviets of people's deputies, the Makhardze, Lanchkhuti, Tskhakaya, Adigeni, Borzhomi, Khashuri, Mtskheta, Dmanisi and Dusheti party raykoms and the ispolkoms of the corresponding regional soviets of people's deputies has been focused on the lack of proper control over the fulfillment of the party and government decisions regarding questions of protecting the water resources from pollution. They are obliged to examine the course of construction of the water-protection facilities and give these construction sites comprehensive assistance.

It has been taken into consideration that the GSSR Ministry of Residential-Communal Services jointly with the GSSR Gosplan, the Main Administration for Major Construction under the GSSR Council of Ministers, the GSSR Gosstroy and the State Committee of the GSSR for Enviromental Protection have formulated a draft solution which guarantees complete halting to discharge of untreated waste water into the basins of the Black and Caspian Seas in the limits of the GSSR by 1985.

The ministries, departments, enterprises and organizations of the republic have been entrusted with taking additional water-protection measures to stop the discharge of untreated production waste water.

The Georgian Communist Party Central Committee and the GSSR Council of Ministers have concentrated the attention of the head of the Main Administration for Major Construction of the GSSR Council of Ministers Comrade Zautashvili and the deputy minister of construction of the Georgian SSR Comrade Mandzhganladze on the interruption in the operation of facilities because of the untimely supply of necessary equipment, planning-estimate documents, structural parts and materials to the construction sites. They have warned them that they will be personally responsible for this.

The deputy ministers: of public health Comrade Gogichadze, of construction materials industry Comrade Bezarashvili, of agriculture Comrade Chikvaidze, of rural construction Comrade Gogeliya, of light industry Comrade Apakidze, of the fruit and vegetable industry Comrade Zodelava, of automobile transportation Comrade Melikishvili, deputy chairman of the board of Tsekavshiri Comrade Shotniashvili, manager of the trust "Gruzgidroenergostroy" Comrade Tsiskarishvili, head of the Georgian marine steamship company Comrade Chkheidze, head of the industrial association of the Georgian SSR "Chay-Gruziya" Comrade Malazoniya, head of the industrial association of the Georgian SSR "Samtrest" comrade Loladze, director of the Zestafoni plant of ferroalloys Comrade Kashakashvili and the director of the Kutaisi automobile plant Comrade Kharevava have been warned that together with the corresponding services they are personally responsible for the implementation of the water-protection measures planned by the party and government decrees.

It has been suggested that the procurator's office of the Georgian SSR strengthen the procurator's inspection of observance of the requirements of the law on protecting reservoirs from pollution.

The State Committee of the GSSR for Television and Radio Broadcasting, the editors of the newspapers KOMMUNISTI, ZARYA VOSTOKA and SOPLIS TSKHOVREBA and GruzINFORM have been entrusted with systematically organizing transmissions and publications of materials under the heading "Cleanliness for the Georgian Reservoirs."

The Georgian Communist Party Central Committee and the GSSR Council of Ministers have also planned a number of other specific organizational and political measures to guarantee the cleanliness of the republic's reservoirs.

9035
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ATTEMPTS CONTINUE TO KEEP KARA-DAG AS SANCTUARY

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 1 Sep 81 p 4

[Article by I. Serkov: "Kara-Dag Asks for Protection"]

[Text] Neither the closeness of individual apartments, nor the cafeteria lines disturb the people who rush here, for Koktebel' means the sea, the sun, and finally, Kara-Dag.

Two years ago, Kara-Dag, its slopes, its bays and beaches, its unclouded sea, and all the adjacent territory were closed to visitors.

"What kind of sanctuary is this that does not allow people!" many people said indignantly, forgetting the meaning of the word "sanctuary." It turned out that the reason was simple, Kara-Dag was tired of people.

"Precisely, tired!" says candidate of biological sciences Valeriy Vladimirovich Trusevich, scientific secretary of the Kara-Dag department of the Institute of Biology of the Southern Seas of the Ukrainian SSR Academy of Sciences. "There is an "agitation factor" in ecology. This is constant pressure on nature on the part of man. Trampling of plants, campfires, garbage, all of this, like a press, crushes nature. A type of undeclared war begins, in which, alas there are no victors, only the vanquished. The least adapted flora and fauna disappears. More stable organisms, for example, thorns, appear."

Kara-Dag has been used for dozens of years without caution, rapaciously and constantly. The unique natural complex was annihilated, and thousands of people, at times sincerely considering themselves lovers of nature, did not seem to understand their destructive role.

Kara-Dag is the only volcano in Europe of the Tertiary epoch, more precisely, its fragment. A powerful eruption took place here 150 million years ago which split off part of the mountain range and revealed a crater and the foot of the volcano. Kara-Dag became a unique manual on volcanology of which there are practically no analogs.

But this is not the only reason for its uniqueness. All the living forms existing here were united into a unique ecological structure, whose comprehensive study could yield astounding scientific results. This only became possible now, with the opening of the sanctuary, or if you want, the "closing " of Kara-Dag. By a decree of the Ukrainian SSR Council of Ministers, Kara-Dag has been proclaimed a scientific sanctuary in which any industrial use and open visiting is completely forbidden. It was impossible to postpone the decision any longer. Dozens of species of flora, including the especially valuable ones, the relicts,have already disappeared. There are no more large predators here, and many types of birds have stopped nesting.

The Serdolikoviy bay where the carnelians, agates and chalcedonies lay under foot of swimmers, is completely depleted. Any searches for the minerals today are useless. There were unique gem veins at Kara-Dag in the not too distant past. Now there is not even one intact! The reason is simple. The collectors and lovers of stones tried to carry home these natural souvenirs. Whole crews of developers "worked" here sometimes, extracting minerals on almost industrial scales. Until now the "experts" were poking about the Koktebel' beaches offering rings with Kara-Dag stones. Why mention them when a quite legitimate state workshop was opened in Planerskoye and Kara-Dag gems were sold?!

But, of course, we are not only involved in protection. One of the main goals of the sanctuary is to make an inventory of the flora and fauna, including marine. The scientists are working on this now. The first results of the "sparing" regime are already visible. Certain bird species that had disappeared have appeared. For example, six pairs of crested cormorants that have been entered in the Red Book have settled in the L'viniy bay. Only 400 pairs of these birds have been counted in the entire world. Attempts are being made not to disturb them. Observations are made from sea, far from the shore through binoculars.

There are a lot of difficulties with the birds in general. An enormous number of crows and magpies have appeared at Kara-Dag. These predators destroy nests, destroy eggs and the fledgelings of the disappearing species, creating irreparable ecological "niches." They came here after the people: garbage, refuse and scraps of food attract these birds. After the most cosmetic clean-up, five(!) trucks of garbage were removed from here.

"In a word, the sanctuary has been created, but the 'undeclared' war continues. Tens of thousands of workers vacation in Planerskoye every year. The majority of the them, some from curiosity, and some simply on "picnics" set out for Kara-Dag for diversion. It is our task to stop this wave," says Trusevich.

The hunters for the time being manage with difficulty, though with variable success. Crowds of tourists keep "penetrating" the sanctuary, sometimes 30-40 of them. How can a hunter stop them?

The Kara-Dag bays and beaches which need a long rest, attract people like a magnet. The narrow 6-kilometer strip is literally exhausted by many years of forays. The position of the oblast leaders is surprising for another 7 kilometers of magnificent, undeveloped and not very trampled beaches stretch after Kara-Dag. There are picturesque bays and clean sea. What would it cost to bring water here, set up the basic conditions for recreation for people, and make a road? These measures would be compensated for in almost a year, and it would be a great help to the sanctuary.

It is now as though we are returning a debt to nature. This needs to be done cautiously, with humaneness and concern. How nature will respond is a matter for the future.

We walked a narrow path, now taking off to the rocks, now descending to the very surf, and the strong, wiry hunter Vladimir Pavlovich Morochko, despite his 52 years, adroitly maneuvered among the enormous boulders.

"There are only rocks all around. Is it not boring for you here?" I asked.

"If only it were! People come here and some of them fall. It is true that Kara-Dag has been closed. You say to some 'tourist': What are you doing here, why are you behaving like a hooligan? And he answers: It does not matter to me, I will not come here anymore! Are these really people? Everything here is beauty, everything is alive. You see that rock over there, it is called the 'rock of Kuz'mich.' A carpenter lived here who was called Kuz'mich. He once went fishing. They waited for him at home but he did not return. They went after him. They arrived but he was dead. He lived 102 years but died here on this rock. This is why the bay and rock are called Kuz'mich. I would like it to be that way, to spend my whole life with Kara-Dag."

9035
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VARIOUS SOLUTIONS TO AIR POLLUTION EXAMINED

Moscow PRAVDA in Russian 30 Aug 81 p 3

[Article by V. Vintsevich, expert of Glavgosekspertizy of the USSR Gosstroy and A. Lavrenevskaya, engineer: "Stack Higher than the Television Tower"]

[Text] [Text] Further development of metallurgical industries, their broad technical re-equipping, as well as improvement in environmental protection measures stipulated by the 26th CPSU Congress make it urgent to improve the quality of the plans for construction and reconstruction of the enterprises in this sector with regard for environmental protection requirements. These enterprises make a large "contribution" to environmental pollution. Analysis of many plans indicates that the environmental protection measures taken in them are insufficient in a number of cases.

Scientific achievements make it possible to compute the concentration of harmful substances which will enter the atmosphere in the form of production wastes even before a plant is built. Production processes have also been developed which guarantee the maximum use of raw materials and fuel and produce the minimum of wastes which pollute the environment. It is therefore quite possible to make a qualified selection of both the types and the output of the treatment works needed for a given enterprise even at the developmental stage.

The metallurgists of the Khartsyzsk pipe plant in the Donetskaya Oblast have found an interesting solution to atmospheric protection, for example, They need carbonic acid to weld pipes. Its annual consumption reaches 1,500 T. The acid is shipped to the plant by trucks from the Tul'skaya Oblast. This is expensive and at times causes interruptions in the supply. Thus, the annual cost of the truck trips has increased the net cost of the product by 47,200 rubles. At the same time, the plant has a boiler house which discharges exhausts into the atmosphere, polluting it, although these gases can serve as the raw material for carbonic acid production. The institute "Giprostal'" and "YuVEnergochermet" have developed the draft of a carbonic acid station for the plant which uses this raw material. The planned unit not only will provide for the needs of the pipe welders, but will also allow them to sell carbonic acid to other consumers. The annual economic effect of the future station will be R 385,000.

The technical plans for the expansion of the West Siberian metallurgical plant that was drawn up by the institute "Sibgipromez" takes into consideration all the sources of harmful emissions from active and newly started-up facilities. For each of them it stipulates improvement in the "ecologicalness" of the production processes, equipping with units for purification of exhausts, and considerable reduction in harmful emissions.

The experience of the Novolipetsk plant also deserves attention. They have begun to optimize the distribution of different types of fuel between the plant units. This reduces emissions into the atmosphere.

The Institute of Chemical Physics of the USSR Academy of Sciences has developed a basically new method for obtaining sulfuric acid by liquid-phase oxidation of sulfur dioxide at high temperatures. Its productivity is a 100% higher than in the traditional tower method and completely eliminates any harmful effect on the biosphere.

Similar achievements of the scientists need to be widely employed in the plans. It is also necessary to more actively create closed production cycles for industries. The air is reused many times in them and is not discharged into the atmosphere. All the wastes stay in the process.

It is impossible not to consider that protection of the air basin means even more efficient use of resources and a prudent attitude towards them. The positions of certain planning institutes which recommend without sufficient grounds that the power units of the metallurgical plants be switched to natural gas heating are thus debatable. Nitric oxides are formed when natural gas is burned. The plans have also not yet resolved the questions of comprehensive recovery of sludge. At the same time, industries are already operating abroad on comprehensive reprocessing of sludge from the steel-smelting and blast furnaces. The phosphorus, sulfur, cadmium and zinc are extracted from it, while the residues with high iron content after reprocessing are made into briquets or sent to the metallurgical industry.

A number of planning institutes (Gipromez, Ukrgipromez, Giprostal') are actively searching for and placing into the drafts effective means of protecting the air basin from pollution. They can be of perceptible benefit to the national economy. But they are not always realized. Departmental barriers become one of the obstacles on this path.

For example, fluorine is released during melting of aluminum. Powerful and expensive fans are installed in the shops for sanitary reasons, to protect the personnel from its harmful effect. The gas is removed beyond the limits of the production areas and scattered in the atmosphere. Fluorine is a most valuable raw material at the same time. Chemists are spending a lot of capital in their enterprises to obtain fluorine. They could get by without these outlays if the electrolytic baths where fluorine is released were made impermeable. But the metallurgists are only concerned with their business. They do not need fluorine. They get rid of it in the simplest way, they discharge it. The metallurgists often act in the same way with sulfur oxides they do not need. These oxides are the basis for sulfur dioxide production.

A number of plans still stipulate dispersion of harmful gases into the upper layers of the atmosphere. The stacks of many metallurgical plants rival television towers in height, reaching record marks, 250 meters. Of course, the higher the smokestack is, the lower the concentration of harmful emissions and dust in the near-earth layers of the atmosphere. But the air basin is not actually freed of pollution. It is simply scattered on vaster areas. It should also be taken into consideration that the cost of the smokestacks reaches hundreds of thousands and even millions of rubles.

It this necessary? Take, for example, the technical and economic substantiation of environmental protection measures for the city of Zhdanov made by the Zhdanov branch of the institute "Ukrgipromez." This is a major industrial center where there are many enteprises which discharge carbon, sulfur and other substances into the atmosphere. The planners revealed sources of pollution of the air and other media, developed specific environmental protection recommendations, and defined the cost of the protective measures. It was scientifically substantiated and computed at the same time what should be done and what outlays were required to have clean air in the city. It is naturally impossible to do everything at once. Efforts and resources need to be directed first to those areas where the main polluters are operating. A unified technical and economic substantiation was oriented on this and it became the guide for action for the city organizations.

It seems that the useful experience of the Zhdanovites is worthy of the greatest dissemination. Now the sections of the plans which are called "environmental protection" are limited at times to the particular measures which eliminate individual emissions of neighboring enterprises. The development of a unified plan which encompasses the region as a whole will help to eliminate the departmental barriers, will facilitate sanitary control and will improve the condition of the atmosphere. Otherwise it is easy to disperse a lot of the capital which the state allocates for environmental protection.

The development of comprehensive environmental protection plans, of course, suggests close cooperation of the planning institutes and the local soviets of people's deputies.

The decree of the CPSU Central Committee and the USSR Council of Ministers "On Additional Measures to Strengthen Environmental Protection and Improve the Use of Natural Resources" is aimed at implementation of comprehensive measures specifically, and stipulates the need to work out territorial environmental protection plans. It would not be an exaggeration to say that the primary role in this matter belongs to the plans. They should be assessed, in our opinion, with regard for the fact of how successfully they resolve the questions of comprehensive purification of harmful emissions, and the use of products which can be obtained from them.

9035
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USSR

AIR POLLUTION AFFECTS VILNIUS' CLIMATE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 23 Jul 81 p 4

[Article by L. Rodzinskiy: "The City Breathes"]

[Text] It is hot. The unmerciful sun has been heating the houses and streets since early morning. It is as though even time is stuck in a thick haze of heat. "We would rather it was evening or night with their life-giving coolness!" we urge it on. The sun hides behind the horizon, leaving the sky with stars, but the desired relief does not come. It is as though the streets of the city are a cooling furnace which puffs heat deep into the night. Why does this happen?

"It is customarily thought that the nocturnal stuffiness is a direct consequence of the diurnal heat," relates D. Perkauskas, a colleague from the radiological laboratory of the Institute of Physics of the Academy of Sciences of the Lithuanian SSR. "It is, strictly speaking: the roads,walls and building roofs which are heated during the day, give off the accumulated heat. This is what is surprising: some nights the buildings and the surrounding air cool off fairly quickly. On other nights, with the same temperature during the day, the desired cooling off does not occur for a long time. Why? In order to answer this question we decided to construct a mathematical model of a 'heat island'."

"Heat island?"

"Yes, the geophysicists introduced this concept. If an infrared photograph is taken from a high altitude, the earth's surface on the photographs will be presented in the form of a disturbed ocean with dark spots of 'islands,' heated air masses at the location of our cities. In certain regions where the industrial centers are located near each other, these 'islands' form whole 'archipelagos.' In contrast to normal sea islands, their outlines suddenly become blurred. They themselves can also 'stroll' over the map."

"What does this depend on?"

"On the wind."

The quarters of the city which are heated by solar rays during the day, at night give off heat to the surrounding air. Its streams rush upwards in a giant fountain, towards the clouds. Colder air masses arrive in their place from the suburbs, so that after being heated, they are also lifted upwards. At an altitude of about half a kilometer, the warm air is cooled. Its "fountain" breaks down in all directions, returning to the earth somewhere 10-15 kilometers from the outskirts of the city. From here it again arrives at the streets.

'Actually, of course, the pattern of air mass circulation in the city area is more complicated," the speaker continues. First of all, the winds make large 'corrections' in it. If they are constant in direction, then the 'heat island' is shifted in this direction. It is most important that the winds carry off part of the heat, helping the city to 'cool off' faster. But the winds usually die down at night. And this is the cause..."

The city gives off the accumulated heat not only through convection, circulation of heated air masses. A lot of heat leaves the city quarters in the form of thermal radiation. At the same time, the uprising air "fountain" draws after it a mass of the finest dust and aerosols which are especially abundant in the industrial emissions. On those windless nights, these particles hang over the city, turning into a screen which is impervious for thermal rays. They prevent the cities from rapidly cooling off at night.

"How can we combat this phenomenon?" I ask the scientist. "We cannot artificially turn on the wind."

"The necessary measures have long been known. We have only confirmed their expediency on a mathematical model. First, we have to switch to waste-free technology which reduces to a minimum the industrial emissions of smoke and gases. In addition, the thermal pattern can be consideraly improved if instead of low houses spread over the territory, we build multistory buildings. They have a much smaller heating area. Of course, it is necessary to avoid dark colors in every way possible: the actual buildings, their roofs, and even the pavements on the city streets should be made light colors which are good heat reflectors. The most important is to have more landscaping: trees, flowers and bushes absorb a large quantity of heat for their biochemical processes, releasing life-giving oxygen. This should be done not only for the sake of comfort in the cities."

"For what other purpose?"

"Powerful 'heat islands', and the more so their 'archipelagos' can disrupt the traditional routes of air mass movement above the planet. This means that serious changes in the climate will result."

9035
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USSR

KRASNOYARSK GES AFFECTS YENISEY TEMPERATURE

Moscow SOTSIALITICHESKAYA INDUSTRIYA in Russian 23 Jul 81 p 4

[Article by V. Stegantsev, head of the laboratory of the branch of the Scientific Research Institute of Water Supply, Sewer Systems, Hydraulic Engineering Structures, and Engineering Hydrology: "How to Freeze the Yenisey?"

[Text] The unforeseen happened: after the Krasnoyarsk GES was started up on the Yenisey, an air hole formed 300-400 km in length below the dam every winter. It "lives" by its own laws: the frosts get stronger and the air hole shortens, while during a thaw it enlarges again. But it does not completely freeze even in the most severe cold.

Now when frosts of 35-40° come to Kransoyarsk, the streets are submerged into a milky shroud. This "steams" the air hole on the Yenisei. Puffs of fog interfere with traffic and disrupt Aeroflot's schedule. The summer brings many annoyances to the avid swimmers: the water temperature in the Yenisey does not rise above 10-12°. Only the "walruses" swim in it.

I will not hurry to criticize the planners of the hydrosystem. According to their calculations, the length of the air hole should not have exceeded 20 kilometers. Since the hydroelectric power plant was built considerably farther from Krasnoyarsk, it did not threaten the city at all. It was only found out later that the technique used to make the calculations was not suitable for the mighty Yenisey. The same type of air hole developed behind the dam at the Sayano-Shushenskiy GES.

But these arguments are poor consolation to the citizens of Krasnoyarsk. They do not like the fact that there is no strong ice in winter. This means that the ancient transportation links between the farms located on different shores and on islands are impossible. Physicians are disturbed by the increased air humidity. During frosts they promote the development of upper respiratory diseases. The hydrologists do not like the fact that the bottom of the river has begun to be intensively overgrown with algae. In a word, there are reasons to ponder how to freeze the Yenisey.

Our calculations and estimates show that the problem can be resolved in several ways. The reservoir behind the dam has a volume of 30.4 billion m^3. This is an enormous accumulator of thermal energy. Water enters from it into the turbine water lines not from the surface, but almost from 40-meter depth. It therefore practically always has the same temperature: in winter, sufficiently high not to freeze, and in summer, too low for avid swimmers. At the same time, the flow of this water is so powerful that even after by-passing the GES turbines, it cannot immediately be mixed with the water mass behind the dam. It has to pass another 300-400 km in order to "become normal."

The decision arose from here to set up the water intake for the hydroturbines so that it did not come from the deep area, but from the surface layers of the reservoir. In these layers the temperature pattern of the water is close to the natural.

A large floating board with overhang has to be lowered to a depth of 3 meters along the entire dam from the reservoir side in order to accomplish this. The overhang must be directed towards the upper water in order to prevent the ascending streams from the deep areas from entering the water lines. This overhang should be made mobile so that the streams can be regulated depending on the water level in the reservoir. The board itself can be made of the most diverse materials, even wood.

A somewhat different solution was suggested by V. Lyapin and V. Pridorogin, colleagues from the All-Union Scientific Research Institute of Hydraulic Engineering imeni B. Ye. Vedeneyev. In their plan, the board overhang is made in the shape of a box which is held on floats. The water enters it and approaches the water intake holes. With a drop or filling of the reservoir, the box drops or rises by itself.

There is yet another plan, that of the Moscow engineer G. Maksimov. It is based on the same idea of feeding water from the surface layers of the artificial sea, only the board for this is made with "windows" opposite each water intake hole so that the water only enters the working unit. The "windows" must be opened and closed with the help of a valve.

In a word, there are many proposals. However, before any of them is implemented, a thorough calculation has to be made so that no more errors are made. Now the Yenisey will have to be frozen while the GES is operating. It is common knowledge that it does not discharge water uniformly. This means that the ice on the river will first break up, then water will be poured on it.

There are numerous such questions, but they need to be resolved. A cascade of seven hydroelectric power plants is planned for the Yenisey alone. There will be dozens of them in Siberia and the Far East. This means that even now we need to make a detailed study of the hydrothermal and ice regimes of the river after the construction of a GES.

A comment is made on the problem by the head of the integrated scientific and technical program "Study of Water Ecological Systems of the Yenisey River Basin" Corresponding Member of the USSR Academy of Sciences I. Gitel'zon:

"The situation on the Yenisey has really become difficult. It is planned to deal with it in the framework of the comprehensive program of the Siberian department of the USSR Academy of Sciences. It is still difficult to say which of the plans is better. Only thorough hydrothermal calculations can provide an answer. Our dam specialists from "Lengidroproyekt" with the involvement of the Krasnoyarsk scientists must apparently study this in earnest.

In principle, the surface intake of water from the reservoirs is not an innovation. In Japan, for example, it is done on the Hitotsusi River on a dam 130 meters high. In the United States, a special system in Utah takes water both from the surface, and from the deep layers of the reservoir. It is true that none of these rivers freezes up, and this is precisely what causes the most complications.

Nevertheless, the question of 'how to freeze the Yenisey' is less disturbing today. Another is much more important: who will freeze the Yenisey? For now, none of the departments that the authors of the plans have turned to has risked taking upon itself the load of solving the problem. The USSR Ministry of Power and Electrification apparently should be involved. Once it erects powerful hydraulic structures, as they say, its up to it."

9035
CSO: 5000/3

BRIEFS

ANTI-FLOODING PROTECTION--Leningrad--The 25-kilometer complex of hydraulic engineering structures to protect the city will stand as an obstacle on the path of the driven wave of the Baltic which falls on Leningrad every year. The symbolic first stone is being laid in its foundation these days. The complex which will partition off the Gulf of Finland from the Gorskoye settlement in the north to the city of Lomonosov in the south through Kronshtadt will include 11 powerful rock-earth dams and locks. The structure is rated even for a flooding of catastrophic force when the level of the Neva in the city may rise to 5.5 meters. For comparison we recall that during the largest flooding in the history of Leningrad on 19 November 1824, the water rose to 4 meters 21 centimeters. As soon as a report is received about a wave advancing from the Baltic, multiton steel hinges of gates will advance on rails laid on the bottom of the ship passage channels, the segmented gates on the water-passage openings will close. A powerful shield made of steel and concrete will close the water area tightly. [By S. Mikhaylov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Jul 81 p 2] 9035

GEORGIAN FLOODING--Tbilisi, 18 July (TASS)--Flood rains which have fallen in recent days over the entire territory of eastern and western Georgia have caused flooding. In the Sagaredzho region, the water and mud flows have destroyed dams. Several dams have been carried away in the vicinity of Chiatura. Power transmission lines have been damaged. Serious damage has been inflicted on the crops of corn, soy, beans, vegetables and grapes. Operational headquarters have been set up in the regions who have suffered from the element. The necessary equipment and construction materials have been sent to the cities and villages. Representatives of Tbilisi,Kutaisi and other cities were present at the restoration work. [Text] [Baku VYSHKA in Russian 19 Jul 81 p 4] 9035

MOLDAVIAN EARTHQUAKE--Kishinev, 18 July (TASS)--An earthquake with strength of 4 points, and 5 points in the south of the republic occurred in Moldavia. There were no victims or damage. This was the report to the correspondent at the seismic station "Kishinev." The earthquake's epicenter was located 220 kilometers from Kishinev in the region of Vrancea(Romania). [Text] [Moscow PRAVDA in Russian 19 Jul 81 p 6] 9035

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SEISMICALLY-STABLE BUILDINGS--Ashkhabad--A high degree of seismic danger has not been an obstacle for the Turkmen builders. They have built the first 12-story homes in the center of Ashkhabad. Construction of these houses is planned in other regions of the city. This has become possible because of the works of the Institute of Seismology of the Turkmenistan Academy of Sciences. Its colleagues have developed a classification of soils, which, depending on the composition, may extinguish or increase the strength of an underground impact. Based on this, the scientists compiled a seismic map of Ashkhabad which helps to select the regions of the city for construction of high buildings. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 18 Jul 81 p 1] 9035

MOLDAVIAN EARTHQUAKE--Kishinev, 18 July (TASS)--An earthquake with strength of 4 points, and 5 points in the south of the republic occurred in Moldavia. There were no victims or damage. This was the report to the correspondent at the seismic station "Kishinev." The earthquake's epicenter was located 220 kilometers from Kishinev in the region of Vrancea (Romania). [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Jul 81 p 4] 9035

HYDROMETEOROLOGICAL DIESEL BOAT--Yuzhno-Sakhalinsk, 25 July--The diesel boat "Anabar" the ship of the Sakhalinsk oblast administration for hydrometeorology and environmental control was sent on its next voyage. The trip will last almost 1.5 months. During this time the ship's crew will visit meteorological stations located on Sakhalin and the Kurile Islands and deliver sets of all that is needed for the coming winter: fuel, food, and equipment. At the same time, the automatic meteorological stations will be repaired. [By outside correspondent V. Ryabchikov] [Text] [Moscow PRAVDA in Russian 26 Jul 81 p 6] 9035

LENINGRAD HURRICANE--Leningrad,25 July--The flood rain and squall whose velocity the instruments of the meteorological station were not able to determine, hit the territory of the Leningradskaya Oblast. The hurrican beat for several hours after causing significant damage to industrial and agricultural enterprises and housing settlements of Boksitogorsk, Tikhvin, Lodeynoye Pole and Volkhovsk rayons. Barriers made of uprooted trees formed on the roads. The wind overturned cars and brought down the supports of high-voltage lines. Power supply and communications were disrupted. Train movement stopped temporarily: the element damaged the contact circuit on a 150 km section. The destruction was especially bad in Tikhvin and Novoya Ladoga. The roofs of the animal husbandry farms and houses were removed. Operational headquarters in the municipal party committees were included in the active work to eliminate the consequences of the elemental misfortune. Emergency teams and equipment were immediately sent where it was necessary to restore the normal activity of transportation, communications, and the enterprises of the food industry and public nutrition. Within several hours after the hurricane,passenger trains were running over the restored section of railroad and the telephone and telegraph communications began to operate. [By V. Gerasimov] [Text] [Moscow PRAVDA in Russian 26 Jul 81 p 6] 9035

LUGA HURRICANE--(Leningradskaya Oblast), 26 Jun (TASS)--An air eddy of destructive force, accompanied by a flash of lightning, thunder and showers unprecedented in this area hit the territory of the Luga region yesterday evening. The powerful air waves removed the roofs from the houses. Age-old trees were bent and broken by its blows just like cobwebs and pipes were broken. For a total of 20 minutes, the element raged, then the wind died, but the showers continued. The water level in the rivers and lakes rose swiftly to 1.5 meters in places. The headquarters set up under the Luga municipal CPSU committee to combat the misfortune rapidly took measures to eliminate the consequences of the raging element. Diesel generators were delivered to the animal husbandry complexes for their continuous operation. Continuous food supply was organized in the rest homes and pioneer camps. The emergency brigades of workers worked all night. Already by 10:00, electricity supply had been restored. Other restoration work is continuing. There were no fatalities. [Text] [Moscow PRAVDA in Russian 27 Jun 81 p 6]

AIR PURIFICATION--"It has become difficult to breathe in certain regions of our wonderful Vinnitsa,"our reader I. Karpeyev wrote to the editorial staff. "Everyone understands how important it is to develop chemistry, but the party requires that this does not damage the health of the people. These requirements need to be held to." The editorial staff sent the letter of the reader to the Main Sanitary-Epidemiological Administration of the UkSSR Ministry of Public Health for measures to be taken. As the deputy head of the central board M. Mukharskiy reported, the Vinnitsa Chemical Plant imeni Sverdlov is actually not inflicting many unpleasant consequences on the residents of the nearby neighborhoods with its emissions. It is true that recently gas treatment works were built in one of the shops. The Main Sanitary-Epidemiological Administration again raised the acute question before the USSR Ministry of the Chemical Industry of additional measures to protect human health. As a result, the ministry made a decision to allocate 2 million rubles to set up a sanitary-protected zone. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 23 Jul 81 p 2] 9035

CATALYTIC REFORMING--An unusual structure that is similar to a bookstand has shot up in the environs of Baku. This is the first industrial unit of catalytic reforming, a new industry at the Plant imeni Vladimir Il'ich, the flagship of the Azerbaijan oil refining industry. The unit is equipped with modern means of automatic measurement and regulation. They are used to maintain a stable and optimal production regime. Especially high quality nonethylated automobile gasolines are produced. They are often called "pure ." But is such gasoline possible? The plant director A. Guseynov answers this question: "There are no absolutely nontoxic, that is 'pure' compounds in nature. This also refers to products of oil refining. Gasoline, kerosene, oil and gas fractions during combustion in the operating process release harmful substances. The rapid development of automobile transportation requires that the scientists and production engineers reduce the consumption of fuel. This has proved possible by means of increasing the so-called octane number in gasolines. Ethyl liquid is added to it. However, when these gasolines are burned, exhausts are formed in the car engine which contain carbon monoxide, nitrogen, as well as solid particles. One-third of them are lead compounds. They are the most harmful for man and the engines. The oil refineries of the country have recently widely introduced the process of catalytic reforming of low-octane gasolines. The difference between our unit and those operating at other plants is that it guarantees high, stable activity and permits more effective 'refinement' of the fuel. As a result, nonethylated, low-toxic gasolines can be produced. They are therefore considered relatively pure. Their use reduces pollution in the atmosphere, increases the service life of the automobile engines and decreases fuel consumption." [Text] [Moscow PRAVDA in Russian 12 Jul 81 p 1]

SETTLING TANKS--Poisoning the air with their evaporations and not at all embellishing the Baku suburbs, the turbid lakes formed of formation water will gradually disappear from the territory of the oldest oil region, the Leninskiy. A complex of waste water treatment of the oil and gas extracting administration "Leninneft'" will eliminate them. Giant metal cylinders have been built along the canal leading to the sea. These are the settling tanks of the new complex. They are hermetically sealed, and this means that there is nothing to fear from harmful evaporations. In the settling tanks, the water which is pumped out by the oil workers from the depths, will pass the first treatment, then will be sent through coal filters. Double filtering will permit a 30-fold reduction in the concentration of oil products in the formation waters, and bring them to that degree of purity at which they can be discharged into the Caspian. [Text] [Baku VYSHKA in Russian 17 Jul 81 p 3] 9035

URAL RIVER CLEANER--At the insistence of the deputies of the city of Ural'sk, working of sand and gravel in the bed of the Ural River has been banned. The construction materials are only extracted on the shore now. The people's elected representatives of the oblast decided to return the river to its original cleanliness, thus fulfilling the instructions of the electorate. Together with public-spirited people they recorded all the sources of possible pollution of the water. Over 200 animal husbandry facilities were moved from the territories adjoining the Ural and its tributaries at their request. Discharge of industrial and household effluent was completely halted. At a great distance from the shore, municipal waste accumulators were erected. Construction of a station for biological treatment is underway at accelerated rates near Ural'sk. [Text] [Moscow IZVESTIYA in Russian 23 Aug 81 p 2] 9035

KURILE EARTHQUAKE--Yuzhno-Sakhalinsk, 4 Sep (TASS)--A strong underground jolt was recorded on 3 September in the evening by the seismic stations of Sakhalin and the Kurile Islands. In the epicenter of the earthquake, 80 kilometers to the east of Shikotan Island, the strength of the jolt reached 8 points. There were no fatalities. [Text] [Moscow PRAVDA in Russian 5 Sep 81 p 6] 9035

SECOND KURILE EARTHQUAKE--Yuzhno-Sakhalinsk, 9 Sep (TASS)--Today at 07:27 local time, the seismic stations of Sakhalin and the Kurile Islands recorded an earthquake whose epicenter was located 80 km to the southeast of Shikotan Island. The underground jolt was felt on Shikotan with strength to 5 points. On Kunashir it was 3-4 points. Today's earthquake on the Kurile Islands is the second after the powerful jolt of 7-8 points that occurred here on 3 September. The earthquake did not cause any damage in the settlements. [Text] [Moscow PRAVDA in Russian 10 Sep 81 p 6] 9035

CASPIAN CLEAN-UP--Baku, 31 Aug--Construction of an usual mooring is being completed in the sea port. It will collect the daily wastes from ships coming to the city. This is one of the measures taken to protect the Caspian recently. The design of the modern tanker fleet is such that pollution of the sea by oil products is excluded, while on the old tankers where there are no special compartments, the ballast, a mixture of water and oil is given to the shore treatment works. Located next to the Oil Refinery imeni 22nd CPSU Congress, they separate the mixture and send thousands of tons of additional raw material to the enterprise. The Caspian is becoming cleaner. It is curious that more fishing rods are being seen on the sea beaches. The specialists assert that the gray mullet, Caspian roach and sand eels have returned to the Apsheron shores. [By L. Tairov] [Text] [Moscow PRAVDA in Russian 1 Sep 81 p 6] 9035

SAKHALIN CYCLONE--Yuzhno-Sakhalinsk, 5 Aug--A cyclone of unusual strength hit Sakhalin. It brought an enormous quantity of precipitation. In the central part of Sakhalin, the Uglegorsk, Tomari, and Makarov regions, rain fell during the day to 1.5 of the monthly standards. The rivers overflowed, flooded individual population centers, and large areas of agricultural crops sown with potatoes, vegetables and feed crops. Tens of kilometers of roads were washed away. Bridges were carried off in places and the telephone communication was disrupted. Railroad communication was interrupted in some directions. The situation was complicated by the fact that the showers were accompanied by strong winds. In the Kholmskiy, Nevel'sk and Tomari regions they reached a velocity of 30 meters per second. The residents of the oblast were warned in advance about the onset of the cyclone and were able to prepare. The children were evacuated in an organized manner from the pioneer camps and the residents of the hit populated areas. Communications, roads and bridges are being restored and the consequences of the flooding are being eliminated. [By V. Ryabchikov] [Text] [Moscow PRAVDA in Russian 6 Aug 81 p 6] 9035

DON OVERFLOWS--Krasnoznamennyy Severo-Kavkazskiy military okrug--Flooded houses and streets, animal husbandry farms cut off from dry land and power transmission lines under water, this has been the Don since the second half of spring in the area of the historical and architectural monument, the Starocherkasskiy station. Spring was late in the upper reaches of the Don and its tributaries. Then rapid melting of snow began and the river overflowed. The water in it rose over the average level by almost 4 meters. The farmstead Krasnyy and other population points were cut off from dry land. It was hard to conduct rescue operations. Cutters and other boats hit shallows and snags. It was also not easy to do all the work under conditions of the raging element with boats alone. At the request of the local party and soviet agencies floating troop transports commanded by F. Finayev and S. Lavrent'yev came to the flooded area. Drivers A. Popov, V. Borzov and N. Savulyak, led by ensign I. Reshetilo first took all the women with children and the elderly to a safe place. The drivers of the combat machines had to work in a complicated situation. The "amphibia" encountered shores and dams eroded and hidden under water, rapids and whirlpools. In this situation, all the drivers as one showed high skill and courage, and faithfulness to their military duty. At one time the rescue operations were going round the clock. Now the drivers spend 18-20 hours a day in their combat machines. They deliver food and feed to the farms, and transport equipment and spare parts. Life in the regions and populated areas which have suffered from the flooding is beginning to return to normal with each day. The combat engineers get a lot of credit for this. [By Major B. Makarevich] [Text] [Moscow KRASNAYA ZVEZDA in Russian 19 May 81 p 1] 9035

ENVIRONMENTAL INSPECTION--The legal position of the Inspection of the USSR Minister of Defense for Environmental Protection has been defined. It is an agency which controls the condition of environmental protection, the efficient use and reproduction of natural resources, and the timely taking of environmental protection measures in the army and navy. In order to realize the organizational, educational-method and other tasks set before the Inspection, it has the right to check the execution by the military units, institutions, military-educational institutions and enterprises of the legislation on environmental protection and efficient use of natural resources, and require from the corresponding agencies a presentation of accounts and make suggestions on banning or stopping the operation of different facilities. The Inspection raises in the established order a question regarding holding officials responsible for nonfulfillment of plans and measures on environmental protection, inobservance of standards and rules for using natural resources, as well as depriving the guilty of bonuses. [Text] [Moscow KRASNAYA ZVEZDA in Russian 23 Jul 81 p 2] 9035

CSO: 5000/3

BRIEFS

NUCLEAR MISSILE LEAK ALLEGATIONS--For the past several days, dead fish have been drifting ashore along the coastal strip stretching from Magosa [Famagusta] to Yeni Erenkoy. The fishing office in Magosa reports that since several days ago, complaints on this score have increased and that dead fish, particularly of the Orfoz and Sorgoz [Translation unknown] types present a great danger from the standpoint of the public's health. Meanwhile, it is alleged that the fish kill was a result of the joint maneuvers carried out by the Soviets and the Syrians and was caused by poisonous substances coming from the nuclear warhead bearing missiles. The Magosa municipality has taken the matter in hand. It calls on the public to refrain from eating the fish which are drifting ashore. [Text] [Nicosia HALKIN SESI in Turkish 6 Oct 81 p 1]

CSO: 4654/32

SOLUTIONS TO RHINE RIVER SALT POLLUTION PROBLEMS

Paris L'USINE NOUVELLE in French 15 Oct 81 p 84

[Article by Paul Delun: "The Rhine pollution: Michel Crepeau Reopens the File".]

[Text] On 17 November, European environment ministers will meet again to address the problem of the salt pollution of the Rhine. The French minister, Mr Michel Crepeau, will re-examine the file next week with local elected officials, unions, and ecologists. He will have to use all his negotiating talents, because opposite interests are involved.

Let us recall the facts: In order to produce 1.9 million tons of potash per year, the government-run Alsace Mines release 7 million tons of sodium chloride, a fatal salt which poisons both the river and international relations, since the Dutch, downstream, use the Rhine for three-fourths of their fresh water. Germany also, on the other hand, releases as much salt, but it is done in many places, and wisdom requires addressing the most concentrated source first. Michel Crepeau will present 3 projects projected for a 10-year period: Removal by boat to the ocean (110 francs per ton), which seems a prohibitive cost; construction of a "brineduct" to carry the salt to the Lorraine soda mines (30 francs per ton); injection into the Alsace underground, which is the cheapest solution (20 francs per ton).

The latter process consists in replacing the water in a deposit 1,800 m deep by the salt-bearing waste through 3 injection wells and 3 removal wells. This solution was the object of an international agreement in 1976. The agreement anticipated joint financing by neighboring countries, but faced with protests from local elected officials as well as ecologists who opposed the project because of the risks of polluting the water table, the French Government never submitted the treaty to the Parliament for ratification. Local officials and unions both are pushing a fourth solution: the creation of a salt marsh as the starting point for a chemical plant.

A project for an installation capable of processing a million tons and whose production would be absorbed by the neighboring countries was not accepted by the European ministers. There remains the possibility of a national solution, with a production capability of 300,000 tons. Local politicians are hanging on to this solution because it would create new jobs, but consider it as insufficient: "This capability is useless!" protests Mr Jean Ferry, General Secretary of the Compagnie des Salins du Midi et des Salines de l'Est (Southern and Eastern Salt Production Facilities). Led by Mr Claude Coulais, mayor of Nancy, the people of Lorraine have created a committee for the defense of their own salt production facilities, rallying behind the theme: "Every ton produced in Alsace would be taken away from Lorraine! A thousand jobs are at stake in the Meurthe valley."

"Our installations, which have a capacity of 900,000 tons, are operating at 65 percent of their capacity, explains Mr Jean Ferry. And whereas the consumption of rock salt is on the increase (because of road salting in particular), the demand for refined salt has been decreasing on the European market, with those in favor of the salt-producing solution maintaining the confusion" (the French production of salt is 3,235,000 tons, 1,107,000 of which is refined salt).

The people of Lorraine fear a bargain: a "small" salt-producing facility, in any case incapable of eliminating the waste, against an agreement for the injection solution.

The answer is due in November unless, after more delaying tactics, we reach 1990 when the production of the Alsace potash mines should begin to taper off. At the present rate of progress, it is not inconceivable.

As to the waters of the Rhine, they are used to it and Wagnerian singers have not bathed in it for a long time.

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27 November 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 329

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ENVIRONMENTAL QUALITY

No. 329

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INDIAN ENVIRONMENTALISTS REPORT ON VISIT TO PRC

Calcutta THE STATESMAN in English 9 Oct 81 p 6

[Text] New Delhi, Oct. 8--An Indian environmental delegation, which returned early this week after an official visit to China found its host way ahead in pollution control technicians. There was nationwide cleanliness. Millions of trees had been planted.

The main Chinese concern has been the ecological imbalance caused by soil erosion and deforestation. During the civil war forests had been denuded. Now there is adequate emphasis, through the communes in rehabilitating such forests.

The delegation was impressed by the care taken to preserve millions of trees. Most were not more than 20 years old and well-trimmed, their branches did not spread beyond ten feet. Each plant had pre-concrete pillars for support.

In Shanghai alone two million trees have been planted. Elsewhere four-to-five-deep rows of trees could be seen on roadsides.

The leader of the delegation, Mr B. B. Vohra, also chairman of the National Committee on Environmental Planning, which was set up under Mrs Gandhi's instructions in 1980, said in an interview that the delegation did not find any wasteland--it was used either for cultivation or growth of forests. Streets were washed every morning. There was not a single destitute of pavement dweller on the streets. Though the housing problem appeared to be poor no one was found sleeping on the pavements.

Mr Vohra said the Chinese were greatly interested in knowing how India was managing her environmental problems. A reciprocal visit by a Chinese team is expected in February-March 1982.

China had taken up the environmental problem in a big way in 1973. It set up a department directly responsible to the Central Cabinet. Besides, there were also environment protection bureaus under most municipalities and counties in the provinces. Environment staff throughout the country ran into thousands, Mr Vohra said.

He felt the Governmental system was such in China that it was easy to impose discipline on the people. The people, on the other hand, themselves believed in cleanliness.

Though the delegation's itinerary was prepared by the Chinese authorities the members of the team visited farflung places which included the capital, Beijing, Lanzhon, capital of Gansu province, Xian, capital of Shaanxi province, Hangzhon (Shanghai) and Guangzhon (Canton).

Mr Vohra said the Chinese Government made it a policy to be very selective in locating new industries. Existing plants were made to follow all norms concerning the pollution problem. Though all establishments were Government-owned, they were still liable to fines and punishments.

This was one reason why they were able to control their population growth, which was 1.1 per cent against India's 2.4 per cent, couples with a child were singled out for special treatment while others with two or more children, were pronned upon.

There was however, a shocking absence of birds. Old Chinese scrolls with birds painted on them were not to be seen anywhere.

The reason could be attributed to the mass killing of sparrows several years ago under orders from Chairman Mao who believed that the sparrow ate up a large quantity of grain at a time when China needed them most.

CSO: 5000/7007

AUSTRALIA

PAPER CALLS ON FEDERAL GOVERNMENT TO ACT ON BARRIER REEF

Melbourne THE AGE in English 1 Oct 81 p 13

[Text]

IN 1975 Federal Parliament voted to have the entire Great Barrier Reef declared a marine park. While the move originated with the Whitlam Government, it had the enthusiastic support of the then Liberal/NCP Opposition. At last, it seemed, this great natural wonderland would have the protection it deserved. That was six years ago, but very little progress has been made. Only 12.000 square kilometres, or about 5 per cent of the total area, has been placed under formal protection. Plans to declare a second 30,000-square-kilometre section, extending for 500 kilometres along the North Queensland coast, have bogged down in arguments between the Federal and Queensland Governments.

After nine months of discussions the two parties are still a long way from reaching agreement on the boundaries of this section. The Federal Government wants the boundaries to extend right to the low water mark. But the Queensland Government wants them kept to at least three nautical miles off the mainland. The dispute has wide ramifications. For control up to the low water mark — which is provided for in the 1975 act — would give the Commonwealth control over potentially destructive shoreline and coastal development, over tourist depredations and, above all, over mining operations. The declaration of the Cairns section (as it is known) would make the search for oil and minerals within the declared park area, including major islands close to the mainland, illegal. What is potentially the greatest threat to the Reef's existence would thus be removed.

The Commonwealth has the power to declare areas of the Reef as a marine park any time it wishes. Instead it has tried to win Queensland's co-operation. This policy of co-operative protection has yet to prove itself. If it doesn't when the two parties meet again for talks next month, the Federal Government should take courage and declare the Cairns section a marine park, whether Queensland approves or not. The headstrong Queensland Government must be made to realise, one way or another, that the Great Barrier Reef is a priceless asset that belongs not just to Queenslanders but to the nation and to the world at large. As the Royal Commission into the Reef noted, "it is part of the world heritage", and the Federal Government owes it to present and future generations to see that this marine wonderland is preserved from everything that could endanger it.

CSO: 5000/75-9

AUSTRALIA

LEGISLATIVE COMMITTEE FAVORS MINING IN NATIONAL PARKS

Perth THE WEST AUSTRALIAN in English 1 Oct 81 p 3

[Text]

There is no reason why mining exploration cannot be conducted in WA's national parks, according to a major report released yesterday.

But the report by a Legislative Council select committee on WA's national parks also stresses that no exploration should be conducted in wilderness or scientifically reserved areas.

If this were the case, the report says, there is no reason why exploration cannot be conducted in areas under direct supervision of the National Parks and Wildlife Service.

Evidence given to the committee by professional officers of the authority and other bodies said that damage was being caused by amateur prospectors and not by major mining companies.

The report says that conditions of mining should be laid down and administered by the NPWS if a find of "national importance" is located.

An environmental review and management plan should be made before the conditions are laid down.

National Parks Authority.

Suggestions that national parks should be entirely fenced does not find favour with the committee because of the costs involved.

Other recommendations are:

- A programme to eradicate feral cats and dingoes should be conducted nationally.
- An annual fee for entry into national parks should be included with motor-vehicle licences, on an optional basis.
- The State Government should negotiate with the Federal Government for the release of the army land on Rottnest Island.

The secretary of the Conservation Council of WA, Mrs Barbara Churchwood, said that several points in the report appeared to be of concern to the council and they would compile detailed submissions once they had studied the report.

CSO: 5000/7509

BRIEFS

AIR POLLUTION INCIDENT--"A 'disgusting and putrid' smell in the Brisbane industrial suburb of Hemmant caused children to dry-retch and reddened their eyes," a mother claimed last night. Mrs Kathy Parcell, of Garth Street, is angry about air pollution officers being available only in office hours--and arriving after a smell has disappeared. "I know we have to put up with a few things, living in an industrial area, but this smell was too much," she said. "My children, 7 and 5, had irritated eyes and noses. They also dry-retched. It was an ammonia or putrid kind of smell." The Labor MLA for Lytton, Mr Burns, last night confirmed Mrs Parcell's complaint. "We can be fined for throwing down a cigarette butt but we have to put up with companies pumping rubbish into our air," he said. "The air pollution people should have officers on call 24 hours a day." [Text] [Brisbane THE COURIER-MAIL in English 1 Oct 81 p 11]

ASBESTOS CONTAMINATION--A new site has been chosen for the former asbestos town of Wittenoom. The WA Government said yesterday that the site was about six kilometres east of the present town. The honorary Minister Laurance said that he had been assured by the Commissioner for Health, Dr J.C. McNulty, that there was no way of guaranteeing that Wittenoom could be cleared, however much was spent removing asbestos fibres and covering exposed areas. The Government accordingly had a moral obligation to look after the health of future residents of the area and to establish a new site. Several sites had been examined and aerial photography and other survey work had been done. Preliminary work on town planning had also been undertaken. The sites closer to the town had not been acceptable for health reasons and problems of size. Mr Laurance said he had told the Wittenoom health and works committee that he had discussed water and power requirements with the Public Works Department and the State Energy Commission. [Text] [Perth THE WEST AUSTRALIAN in English 3 Oct 81 p 5]

CSO: 5000/7509

ENVIRONMENTALISTS TERM RIVER PROTECTION BILL INADEQUATE

Auckland NEW ZEALAND HERALD in English 14 Oct 81 p 5

[Text] Wellington--The Save the Rivers Campaign Organisation said yesterday that planned Government legislation would not help to protect wild and scenic rivers.

The Water and Soil Conservation Amendment Bill proposes steps to protect rivers, streams and lakes, but Save the Rivers told a parliamentary select committee yesterday that the measures were not acceptable or effective.

Mr A.J. Brunt, the convener of the campaign's wild and scenic rivers action committee, said the bill "merely sets up a judicial mechanism whereby certain official groups can try to gain protection for a river."

"Moreover, at the end of the arduous procedures proposed, the Minister of Works and Development, the nation's chief power investigation executive, will have the ability to veto the decision to protect a river."

Save the Rivers, supported by nine environmental and recreational organisations, said it wanted special-purpose legislation outside the Water and Soil Conservation Act. That should "clearly assert that our most outstanding wild and scenic rivers will be protected over the long term for the enjoyment of future generations.

Clearly Set Aside

"Once a core group of rivers has been clearly and promptly set aside, we believe that recreation and conservation groups will accept as a secondary level of protection for our other impressiver rivers, the sort of hearings procedures proposed by this bill."

Under the bill, applications for water conservation orders are made to the minister, who must refer them to the National Water and Soil Conservation Authority.

The authority, after consulting other bodies, recommends to the minister whether the application should be treated as an application for a national water conservation order or a local water conservation notice.

National orders go back to the authority for consideration, and submissions, while local notices are considered, with submissions, by a regional water board.

The bill includes provisions for an inquiry by the Planning Tribunal into draft orders, of the authority's recommendation that an application be declined.

Another section provides that the Governor-General makes a national order, on the advice of the minister, who would have considered recommendations of the authority or Planning Tribunal.

The minister must lay before Parliament a written statement setting out the reasons for his decision if he decides not to advise the Governor-General that an order be made.

Canoeists Critical

Canoeing organisations also criticised the bill.

A private company, Canoe Safaris (NZ) Ltd. told the select committee that the bill would not grant permanent protection for a "priceless asset." There was no national framework for the allocation of resources between competing demands of recreation, tourism and hydro-electricity.

The Palmerston North Canoe Club said there would be little protection if groups like regional and united councils were not bound to abide by the conditions of a water conservation order, but had only to take them into account.

CSO: 5000/9049

ADVERSE ENVIRONMENTAL IMPACT OF ALUMINUM SMELTER NOTED

Auckland NEW ZEALAND HERALD in English 17 Oct 81 p 1

[Text] A second aluminium smelter would have a marked effect on the pace of hydro-electricity developments and bring forward the investigation of many smaller and environmentally sensitive rivers.

This was one of the findings of the Commission for the Environment in its audit of an environmental impact report on the Aramoana smelter planned by South Pacific Aluminium Ltd.

The commission called for a full study of the implications of faster electricity development which would result from the smelter.

The loss of free-flowing river systems, the flooding of productive land and the removal of fisheries and other recreational assets would occur earlier than if no smelter was built, the commission found.

Pollution

A rise in power station construction would mean less time for environmental investigations.

Sulphur dioxide and other pollutants would increase. Agricultural land would be mined for more coal.

The closest parallel was with the situation which had arisen in the early 1970s over the proposal to raise the level of Lake Manapouri, the commission said.

But the consequences of the smelter would not be identified with a single lake or river, such as the Clutha. They would probably be felt progressively as smaller and more sensitive rivers were investigated for their hydro potential.

The audit deliberately avoided taking a "for or against" stand on the smelter, said the Commissioner for the Environment, Mr K.W. Piddington.

But it would be impossible to place a smelter or any similar industry at Aramoana without substantial impact on the local environment, he said.

There would be a complete change in the character of the Aramoana spit and both sides of the lower Otago Harbour.

Mr Piddington, said the commission, had ended up taking a more cautious view of the project than its advocates.

The audit found that the impact report by South Pacific Aluminium was comprehensive and of a high standard.

The expressed intentions of the company to protect public health values was "clearly excellent," said the commission. The company had said it had already investigated practically every aspect of environmental significance.

Shortcomings

However, the report had given an optimistic view of the information gathered so far, conveying the impression that the environmental impact of the project would be slight. This conflicted with the commission's own analysis which stressed that the impact would be "quite important."

The report suffered from other shortcomings, the comission found.

A sketch of the proposed plant, for example, had shown no smoke or steam plume although these were a feature of established smelters.

The perspective of the plant had also been flattened out, suggesting the smelter would be less dominant in the landscape than would actually be the case.

The impact of the project on the social environment was not clearly set out and the report had under-estimated the impact of the plant on the coastal ecosystem.

Destruction

The ecosystem would be under stress which could lead to significant deterioration, the audit said. An area of tidal wildlife habitat would be lost.

The Aramoana and Te Ngaru communities would be destroyed and the quality of life of other harbour communities disrupted.

Up to 1600 new jobs would be created over the next 10 years if the smelter were built, putting pressure on housing and social services.

The commission recommended that an independent committee be set up to continuously monitor environmental impacts of the smelter.

The general manager of South Pacific Aluminium, Mr J.G. Smith, said the company disagreed with some of the opinions in the audit. But it was pleased at the recognition of the high standard of the impact report.

"At this stage we are still engaged in further research and investigations to provide a more advanced picture of the proposal for the Planning Tribunal."

The completion of the audit coincided with the announcement that one of the partners in the consortium, Alusuisse, was withdrawing from the project.

The audit was still required under the National Development Act and, while any revived project would not include the Alusuisse Caster II sheet metal plant, the commission considered the change would not alter the main findings of the audit.

CSO: 5000/9049

NEW ZEALAND

BRIEFS

ASBESTOS LEVELS--Wellington (Press Association)--The Health Department is to tighten controls on the allowable level of asbestos in the air. From October 31 the permitted concentration of asbestos fibres to which people may be exposed will be reduced. The department's deputy director of public health, Dr John Stoke, said the concentration of asbestos fibres, other than blue asbestos, would be reduced from two fibres a millilitre of air to one fibre a millilitre of air. "The permissible concentration for blue asbestos remains unchanged at 0.2 fibres a millilitre of air," he said. The results of a review by the Health Department, other government departments, industry and union representatives, was in line with the latest international trends in the control limits of asbestos exposure, Dr Stoke said. "These changes in control limits will further the department's commitment to ensure a safe environment for workers exposed to asbestos fibre." [Text] [Auckland THE NEW ZEALAND HERALD in English 14 Oct 81 p 10]

WATER RIGHTS--A rehearing of water rights granted to build the high dam on the Clutha River at Clyde will be sought by the Environmental Defence Society. The water rights were granted by the Planning Tribunal last year when it was said that electricity from the dam was urgently required for the proposed Aramoana smelter. "It is now clear the urgency has gone, and it may be that the smelter will not proceed at all," said the society's executive officer, Mr Gary Taylor. The tribunal had preferred the high dam to the less environmentally damaging low dam as it would generate electricity three years sooner, he said. With the urgency gone there was no basis for that preference, he said, and the society would apply to the tribunal for a rehearing. [Text] [Auckland THE NEW ZEALAND HERALD in English 16 Oct 81 p 8]

CSO: 5000/9049

POLLUTION THREATENS PANGASINAN

Manila BULLETIN TODAY in English 23 Oct 81 p 31

[Text]

Pangasinan Gov. Aguedo F. Agbayani has brought into focus the gravity of the environmental problem in the province and called for cooperative efforts to solve the problem during a seminar workshop on environmental protection recently which was participated in by mayors and provincial officials.

The governor called attention to reports of UN experts J. R. Prosser, and Dr. Menachem Lourie, who is in Pangasinan to design the Pangasinan Integrated Area Development (PIAD) project, as follows:

1) "Extensive sedimentation due to erosion and indiscriminate tailings disposal has seriously affected the irrigation system in the lower Agno, particularly in the Agno River Irrigation System (ARIS). It is estimated that at least 27,000 hectares of a total area of approximately 45,000 hectares has been adversely affected by siltation of canals, laterals and paddy land in the lower Agno basin."

2) "The siltation/pollution problems of the Bued/Pantalan River Systems are currently being studied by a Philippine government interagency team. Preliminary evidence indicates that siltation and toxic metals (the latter almost certainly resulting from indiscriminate mines tailings practices) have caused serious depletion in aquatic flora and fauna in the lower Bued and the Bued/Pantalan estauary."

3) "A recent environmental problem directly related to mines tailings disposal has emerged in the Eguia river system.

"Fish and invertebrate kills and damage to rice and other crops were observed by residents in the downsteam water courses, on flood plains affected and in the Eguia river estuary and Dasol Bay."

4) "The dominant environmental problem in the catchment appears to be oxygen depletion and bacteriological contamination due to poor industrial and domestic waste disposal, primarily in the Calasiao-Dagupan area."

The governor underscored the fact that although the pollution problem is serious, at this time however many people are not yet aware of it.

"If these pollution problems are not remedied, time will come when our production of food products such as rice, fish and vegetables will be so depleted and reduced that our people will suffer from very high prices of food and even from hunger and starvation," he said.

CSO: 5000/4904

BILL ESTABLISHES PENALTIES FOR MARINE POLLUTION

Kuala Lumpur BUSINESS TIMES in English 18 Sep 81 p 7

[Text]

THE Sri Lanka government has just approved a bill that will inflict both civil and criminal liability on anyone found guilty of causing pollution which is discharged or escapes into Sri Lankan waters.

The Marine Pollution Prevention Bill means that in the case of criminal liability anyone convicted of the offence will be liable to a fine exceeding Rupees 1 million.

In the case of civil liability the owner of the vessel would be made liable for compensation in a civil suit.

During the second reading of the bill, Minister of Trade and Shipping Mr Lalith Athulathmudali said that Sri Lanka's sourthern coast especially off Devinuwara is in constant danger of pollution.

All the oil tankers that route from West Africa to East Asia, particularly Japan, travel within three miles of Devinuwara. The fishing industry on the southern coast would be very seriously affected if there was pollution.

The tourist industry on the southern and western coasts would also be seriously affected.

The minister said that together with the bill the government has also proposed to the Inter-governmental Maritime Consultative Organisation (Imco) to set up a traffic separation scheme for the southern coast off Devinuwara.

Under the Imco proposals all ships carrying more than 2,000 tons of oil in bulk or as cargo would have to take compulsory insurance or be guilty of a criminal offence.

The minister said that every ship entering Sri Lankan waters would have to keep a record of any oil or pollutant it sees on Sri Lanka waters and report it to the marine pollution prevention authority.

The transfer of oil at sea would also be subject to special permission and restrictions would also be imposed on the cleaning of ships off the coast.

The minister said that the government was also seeking enabling provision under the bill, as and when it considers it proper, to implement the international conventions relating to maritime pollution. The bill was passed in all three stages.

CSO: 5000/8002

INVESTMENT OUTLAYS FOR ENVIRONMENTAL PROTECTION DESCRIBED

Warsaw INWESTYCJE I BUDOWNICTWO in Polish No 5 May 81 pp 28-32

[Article by Miroslaw Gorczyca]

Investments in the Area of Environmental Protection

[Text] The constant growth in the world's population; development of material production; depletion of free, undeveloped land reserves; extermination of certain species of flora and fauna; decline in the amounts of mineral resources; and, above all, deterioration of environmental conditions, which constitutes a menace to human health and life, have forced man to reorient his relation to the physical environment. Man's economic activity must result in a transformation of the environment. The problem lies in the necessity to minimize the consequences of changes in the environment, to utilize existing resources sensibly and to eliminate the negative effects of anthropogenic changes.

Environmental protection has many aspects; there are numerous means of realizing protective programs. They can be of a political, legal, technical, economic, cultural, educational and other nature.

Pollution of the environment and exploitation of its resources as well as the discharge of all kinds of waste are characterized by a strong increase in population growth and in industrial development, which are destructive to the environment. Among the disturbing effects, we must single out the concentration of pollutants in densely inhabited, industrialized and urbanized regions, over the threshold level of self-purifying environment capabilities, with a limited ability to eliminate harmful effects of violations. The irregularity to population distribution and of economic potential and the disproportions in utilizing the environment's resources cause ecological tensions and local or regional degradation; they also create a number of shortages (water, power, raw material and others). The growth of environmental pollution and the unreasonable use of the environment's resources occurred--from the point of view of ecological requirements--through uncontrolled development of new techniques and technologies and subsequent management. An adequate program of antipollution measures generally did not accompany the rapid development of contaminating techniques.

The solution of problems of the environment's deteriorating quality, of wasteful exploitation of its resources as well as of the removal of effects of violation should be looked for, first of all, at the economic level. The main reason for environmental deformation was the disregard by its perpetrators of the economic consequences of environmental degradation. Unfortunately, one cannot write on this subject in the past tense only. Many natural resources were considered free properties (for example, water), with no need to pay for their use. The deteriorating quality and limitation of environmental properties transformed them into economic values in the full sense of the word, for which one has to pay. This requirement is not fulfilled for all environmental values and resources. If the manufacturer does not have to consider damages to the environment, he cannot be expected to protect it, as it costs a great deal.

Investment Activity in the Area of Environmental Protection

The Bill on Environmental Protection and Formation, passed by the PRL Parliament (Sejm) on 31 January 1980 and implemented in September 1980, protects the resources of the natural environment, stipulating that, while satisfying social and natural needs, "one can use same exclusively within the domain established in the national socioeconomic plans and in the territorial development plans as well regulations on environmental protection" (art 4). Article 7, part 2, proclaims that "an administrative decision that is contrary to the requirements of environmental protection is null and void." Thus, all participants of the investment proceedings are obligated to comply with the regulations on environmental protection. All "the newly built or modernized structures or complex of structures cannot be turned over for use if arrangements for the environmental protection required by regulations or provided within the framework of the given investment have not been carried out? (art 84). Noncompliance with environmental protection regulations is subject to several sanctions.

The reading of individual articles of the Bill on the Environmental Protection and Formation, with several subsequent exectutory regulations, arouses many ambivalent reflections. No doubt one should be glad for the appearance of such an important legal act, which, when compiled with, will be a strong instrument of environmental policy. On the other hand, the functioning of an environmental protection system in our country points out that even the most adequate legislation and regulations cannot constitute the suitable remedy. I doubt if structures waiting for a scheduled ceremonial initiation will not see the ribbon cut due to such incidental matters (in the opinion of many decisionmakers) as the lack of facilities for environmental protection.

An authoritative quantification of the amount of investment outlays for the creation of environmental-technical infrastructure facilities is a complicated problem. An even more complicated issue is the calculation of effects obtained from these outlays with complementary effects in this area, whether or not they are recognized as outlays for environmental protection.

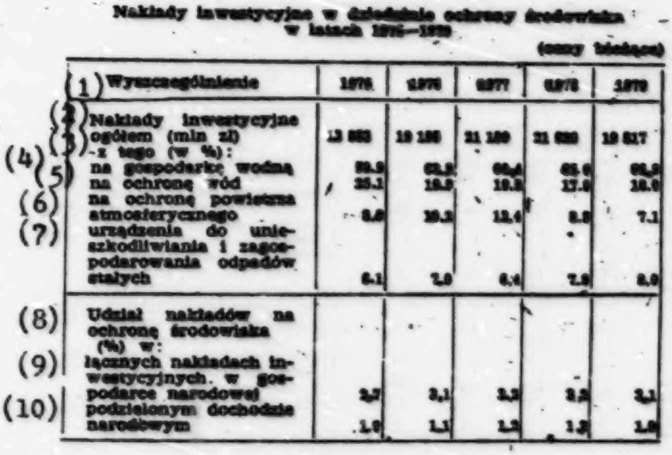
The statistics concerning environmental proction are well developed in our country and subject to steady improvement, along with the recording of outlays and effects of building the environmental-science infrastructure facilities.

The Chief Census Bureau (GUS) reports four types of outlays for environmental protection, namely, investment outlays for 1) water management, 2) water pollution control, 3) air pollution control and 4) neutralization and management of industrial waste. This is an incomplete list, for it does not present the whole problem connected with this issue (for example, protection from noise, etc.) due to the lack of proper information.

Investment outlays for environmental protection in 1970 amounted to more than 6.2 billion zlotys,[1] or approximately 3 percent of combined investment outlays and 0.8 percent of the national revenue. They included outlays for water management (4,464 million zlotys), water pollution control (1,230 million) and air pollution control (540 million). In 1975 GUS added investment expenditures for installations to neutralize and manage solid waste. From data on outlays for the basic infrastructure of environmental-technical facilities (table 1), solid waste outlays constituted approximately 3 percent of combined investments of the national income and 1 percent of the distributed national income in the second half of the 1970's.

Outlays for environmental protection during the whole decade had approximately the same stable share, including 1970, taking into account outlays for the neutralization and management of solid waste.

Table 1. Investment Outlays in the Area of Environmental Protection in the Years 1975-1979 (current prices)



Nakłady inwestycyjne w dziedzinie ochrony środowiska w latach 1975—1979

(ceny bieżące)

(1) Wyszczególnienie	1975	1976	1977	1978	1979
(2) Nakłady inwestycyjne ogółem (mln zł)	13 [illegible]	19 [illegible]	21 [illegible]	21 [illegible]	19 517
(3) z tego (w %):					
(4) na gospodarkę wodną	59.9	63.9	66.4	65.9	65.9
(5) na ochronę wód	25.1	19.0	19.8	17.0	18.0
(6) na ochronę powietrza atmosferycznego	8.8	10.1	12.4	8.8	7.1
(7) urządzenia do unieszkodliwiania i zagospodarowania odpadów stałych	6.1	7.0	6.4	7.9	8.0
(8) Udział nakładów na ochronę środowiska (%) w:					
(9) łącznych nakładach inwestycyjnych w gospodarce narodowej	3,7	3,1	3,3	3,2	3,1
(10) podzielonym dochodzie narodowym	1,0	1,1	1,2	1,2	1,0

KEY:
1. Specification
2. Investment outlays in general (millions of zlotys)
3. Amount (percentage)
4. For water management

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[1] In all cases--unless otherwise reported--values are for current prices.

5. For water pollution control
6. For air pollution control
7. For the neutralization and management of solid waste
8. Share of outlays for environmental protection (percentage) in
9. Combined outlays for investments in the national income
10. In the distributed national income

Water Management and Water Pollution Control

Poland is one of the poorest countries in Europe in water drainage. During the last 30 years, this ranged from 1.6 to 2.6 thousand cubic meters per year per capita. Of more than 14 billion cubic meters of water consumed in 1979 for the needs of the national economy, 70.6 percent went to industry, 11.5 percent to agriculture and forestry and 17.9 percent to municipal management. During the 1970's the consumption of water in the national economy increased over 40 percent. Approximately 85 percent of water consumption was obtained from surface intakes, 13 percent from subterranean sources and 2 percent from mine waters.

The growth of demand for water in the national economy influenced the sewage discharge increase. The total discharge into surface waters in 1979, including cooling waters and polluted mine waters, amounted to 11.7 billion cubic, meters, of which approximately 80 percent were cooling waters. In 1979, 2.2 billion cubic meters of sewage have been discharged though municipal sewerage systems, a 57 percent increase compared with 1970. Of 803 municipalities, only 350 benefited from the 424 sewage treatment plants, some of which also served rural communities. From the total sewage requiring treatment (4,660 million cubic meters), over 2,450 million cubic meters consisted of industrial sewages; the remaining was the municipal sewage.

Without reduction of pollutants (untreated sewage), almost 2 billion cubic meters (43 percent) of sewage were discharged in 1970; of this, 32 percent was industrial sewage and 55 percent, municipal sewage. The equipment of sewage treatment plants ensuring proper reduction of pollutants is unsatisfactory. Sewage treatment plants are unable to neutralize all incoming sewage. Only approximately one-third of these plants have received sewage not exceeding the capacity of their equipment. For almost one-half of the municipal sewage treatment plants, the hydraulic load exceeded their treatment capacity by at least 50 percent.

The majority of treatment plants does not achieve satisfactory results in pollutant disposal. This happens primarily because, among the 453 sewage treatment plants from 350 municipalities, as many as 155 had only mechanical treatment equipment at their disposal. Thus, not only sewage from 435 municipalities with no treatment plants was discharged without treatment, but the so-called "treated" water constituted a serious threat to the quality of surface waters and to the biological life in these waters. In 1979 over 60 percent of the pollution neutralization from treatment processes occurred in less than 30 percent of water consumed; of that, 34 percent involved industrial sewage and 24 percent, municipal sewage.

Water management and water pollution control absorb over 80 percent of combined outlays that--according to GUS--are treated as environmental protection investments. From detailed data on outlays in this area from 1966 to 1979, outlays for sewage treatment, which during the 5-year period of 1966 to 1970 constituted 19 percent of combined outlays, increased its share to 27 percent in the next 5-year period and to almost 30 percent in 1975. During the years 1975-1979 this share was steadily declining and, in 1979, it amounted to only 19 percent. The decline of environmental protection investments in 1979 below the level of the previous 2 years is a characteristic phenomenon. This decline affected in particular outlays for the construction of sewage treatment plants. Retrogression in investment volume was considerably more than justified by the relation of annual values of investment outlays in the years 1966 to 1979, since this period saw a considerable increase in prices of investment-project-work.

The unfavorable investment circumstances during the last years affected in particular outlays for environmental-technical infrastructure facilities. Precisely these investments--always treated in a rather marginal way--are subject to particular restrictions as unproductive and are treated as if they can be postponed forever. A spectacular effect of this approach is a drastic limitation of investment outlays for water management, where reductions occurred in all outlays (table 2).

Table 2. Investment Outlays in the Area of Water Management and Water Protection

(current prices) millions zl.

(1) Lata	(2) Ogółem	(3) z tego na:					
		(4) ujęcia doprowadzenia wody	(5) oczyszczalnie ścieków	(6) zbiorniki retencyjne	(7) regulację rzek, budowę kanałów i zabudowę potoków	(8) stacje pomp w zawałach i na obszarach depresyjnych	(9) obwałowania przeciwpowodziowe
1973	9 417	5 177	2 546	740	640	79	218
1975	12 639	6 363	3 720	1 220	967		368
1978	18 367	9 798	3 897	2 821	1 509		470
1979	16 819	9 407	3 667	1 962	1 415		447

KEY:
1. Years
2. In general
3. Amount for:
4. Water supply intakes
5. Sewage treatment plants
6. Storage reservoirs
7. Flood control, channel construction and stream development
8. Pump stations in mine falls and in depressions
9. flood control levees

It is difficult to make a detailed analysis of the impact of the decline on investment construction, which results from many years of the investment process. However (table 3,) production output and service capacity increments of environmental-technical infrastructure facilities were subject to a general decline.

Great and overestimated hopes were set on the "Wisla" program. This program a priori was threatened by incompletions, not only because of the megalomanically unrealistic scale of the venture but mainly because of no proper potential of investment performance. Data for 1966 to 1979 confirm it. During the 5-year period 1966 to 1970, sewage treatment plants with a daily capacity of 4.1 million cubic meters were put into operation. During the next 5-year period plants with daily capacity of 3.9 million cubic meters were placed in operation, while during the last 4 years (1976-1979) only 1.6 million cubic meters in daily capacity has been added. Statistics in other areas of water management also demonstrate--though not to such a degree--a reggress (table 3).

The setback of investment activity, with limited outlays and investment effects toward the end of 1966-1979, appeared also in water management and water pollution control investment in municipal management (table 4). The underdevelopment of environmental-technical infrastructure facilities, which create the installations of residential-technical infrastructure facilities, presented the principle obstacle in the development of housing.

Annual flood losses reach multibillion values (from 60 to 650 million zlotys in 1976, 1977, 1978 and 1971; up to 6.8 to 8.7 billions zlotys in 1979 and 1977). To some extent part of these losses is inevitable, because the building of storage reservoirs would be unprofitable, since their development and utilization costs would exceed potential flood losses. However, as cultivation of lands exposed to periodic overflows increases, losses accumulate and in the near future may reach tens of billions of zlotys.

Table 3. Investments Transmitted for Use in the Area of Water Management and Water Pollution Control

(1) Lata	(2) Ujęcia wody *) (tys. m³/d)	(3) Sieć doprowadzająca (km)	(4) Oczyszczalnie ścieków				(10) Zbiorniki retencyjne (mln m³ pojemności całkowitej)	(11) Regulacja rzek, budowa kanałów i zabudowa potoków (km)	(12) Obwałowania przeciwpowodziowe (km)	(13) Stacje pomp w zawałach i depresjach
			(5) liczba	(6) przepustowość według metody oczyszczania (tys. m³/d)						
				(7) mechanicznego	(8) chemicznego	(9) biologicznego				
1973	6 084	1 481	119	374	11	873	110,2	1 085	129	31
1975	786	1 762	148	489	85	234	28,0	949	439	22
1978	840	1 740	82	237	40	812	88,7	788	97	33
1979	6 808 a)	1 815	88	249	151	134	18,5	847	77	13

*) Dotyczy również ujęć dla potrzeb energetyki cieplnej; a) w tym 5,8 mln m³/d (po 2,9) w elektrowniach „Kozienice" i „Połaniec".

KEY:
1. Years
2. Water intakes* (thousands cubic meters per day)
3. Supply network (km)
4. Sewage treatment plants
5. Number
6. Capacity according to treatment method (thousands cubic meters per day)

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*Concerns also intakes for thermal power engineering; of this, 5.8 million cubic meters per day (2.9 each) in electric power plants, Kozienice and Polaniec.

7. Mechanical
8. Chemical
9. Biological
10. Storage reservoirs (millions cubic meters of total capacity)
11. Flood control, channel construction and stream development (km)
12. Flood-control levees (km)
13. Pump stations in mine falls and in depressions

Table 4. Outlays and Factual Results of Water Investments and Water Pollution Control in Municipal Management

(1) Wyszczególnienie		1966—1970	1971—1975	1976	1977	1978	1979
Nakłady inwestycyjne (mln zł, ceny 1976 r.) (2)	Ogółem (3) z tego	15 976	37 341	10 613	11 633	12 [illegible]	12 170
	na wodociągi (4)	9 281	18 731	4 [illegible]	4 [illegible]	5 775	5 131
	na kanalizację (5)	5 048	13 426	3 985	4 426	5 104	4 463
	na oczyszczalnie ścieków (6)	1 689	5 383	1 797	1 731	1 851	1 572
Efekty rzeczowe (7)	ujęcia wody (tys. m³/d) (8)	677,7	1 672,7	280,8	368,7	130,3	636,6
	rozprowadzająca sieć wodociągowa (km) (9)	1 970,9	2 314,8	583,7	508,5	442,3	553,9
	przepustowość oczyszczalni ścieków (tys. m³/d) (10)	353,9	887,5	288,6	194,1	84,6	177,9
	sieć kanalizacyjna (kolektory w km) (11)	868,7	1 888,0	383,8	394,5	438,4	428,5

KEY:
1. Specification
2. Investment outlays (millions zlotys, prices of 1976)
3. In general, amount for
4. Water supply systems
5. Sewage systems
5. Sewage treatment plants
7. Factual results
8. Water intakes (thousand cubic meters per day)
9. Distributing water-pipe network (km)
10. capacity of sewage treatment plants (thousand cubic meters per day)
11. Sewage system network (interceptors in km)

Man-made water areas (recreation, sport, fishing industry, etc) fulfill an important role in reducing flood losses as well as several other roles, resulting from associative water management. At the end of 1979, there were 84 artificial water areas in Poland (with a capacity of at least 1 million cubic meters), bringing total water capacity to 2,718 million cubic meters. During the period from 1971 to 1979 only 10 artificial water areas have been built, with a total capacity of approximately 0.4 billion cubic meters; i.e., 2.5 times less than during the 5-year period of 1966 to 1970. This confirms the regress observed in other groups of environmental technical infrastructure installations.

The restraining of consumption and the decline in waste discharge can be stimulated by measures of economic action, evidenced by other countries. The water law of 1974 created possibilities in this area by introducing 1976 charges for water consumption for industrial purposes. From these payments the water management fund was created. However, the lack of materials' processing in the building industry prevented the major part of this fund from being properly utilized.

Investment outlays in water management and water pollution control suffered a disturbing decline in recent years; for example, from 18.2 billion zlotys in 1978 to 16.8 billion zlotys in 1979 (at current prices). There is a justified anxiety that in a general economic recession, investments for environmental protection in particular will be subject to the most severe restrictions. Funds from the water management fund are not utilized from year to year. In 1979 less than 57 percent of available funds were utilized.

Air Pollution and Protection

In Poland industrial plants are the largest contributors to atmospheric air pollution (approximately two-thirds). The Fundamentals of Environmental Protecttion Program in Poland until 1990 set an "uncompromising" requirement for the installation of protective devices. However, the lack of executive powers, inadequate fuel quality, necessity of power turn-offs--to which, unfortunately, protection installations are subject in the first order--cause unsatisfactory results in air pollution reduction. Factories and heating plants particularly harmful to the air quality--and they totalled 930 in 1979--emitted in the 1970's an average of 2.2 to 2.4 million tons of dust pollutants per year. In individual years this quantity was not subject to large variations. On the other hand, the quantity of emitted gaseous pollutants was growing. While it amounted to 2.5 million tons in 1973, in 1975 it exceeded 3 million tons, and in 1979 it amounted to nearly 5 million tons. The amount of pollutants caught in reducing installations, which in 1978 amounted to 21.8 million tons of dust and 0.7 million tons of gaseous pollutants, in 1979 amounted to 25.7 and 0.7 million tons, respectively. During 1979 the degree of dust pollutant neutralization amounted to 91.5 percent and gaseous pollutant to 12.2 percent.

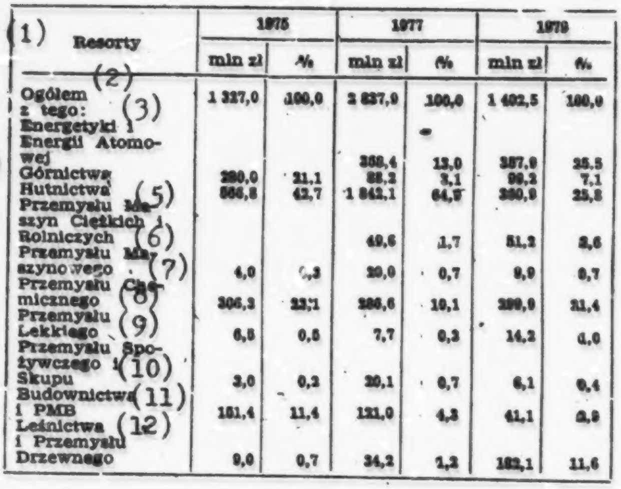
Air pollutants cause enormous losses; of these the most measurable (reduction of agricultural productivity, and accelerated corrosion of standing timber, depreciation of fixed assets, etc.) many times exceeded outlays for air protection. Difficult-to-calculate damages, such as the deterioration of historic monuments or threat to human health and life, must be added. Air pollution is the main cause of morbidity from tumorous diseases and of many other afflictions, as evidenced in studies in highly developed nations.

Limited investment for the environmental-technical infrastructure facilities affected air pollution protection particularly. While in 1977 these investments amounted to 2,834 million zlotys, in 1978 they totaled only 1,941 million zlotys and in 1979, merely 1,402 million zlotys. Considering inflationary tendencies in the building trades, the picture of this dangerous outlays decline becomes clearer. Solely during the period 1977-1979 outlays declines more than double. The case of the Skawina smelting works indicates in a drastic way the harmfulness of air pollution.

Industrial plants are the main--although not the single--perpetrator of atmospheric air pollution. Of 10 departments financing investments in atmospheric air protection, the bulk of outlays comes from enterprises subordinated to ministries of metallurgy, power engineering and atomic energy, which during the last years participated by one-half and up to more than three-quarters in complete investment outlays (table 5).

Table 5. Investment Outlays in the Area of Air Pollution According to Departments

(current prices)



(1) Resorty	1975		1977		1979	
	mln zł	%	mln zł	%	mln zł	%
(2) Ogółem	1 327,0	100,0	2 837,9	100,0	1 402,5	100,0
z tego: (3) Energetyki i Energii Atomowej			368,4	13,0	357,9	25,5
4) Górnictwa	280,0	21,1	88,2	3,1	99,2	7,1
Hutnictwa (5)	566,8	42,7	1 842,1	64,9	360,9	25,8
Przemysłu Maszyn Ciężkich i Rolniczych (6)			49,6	1,7	51,2	3,6
Przemysłu Maszynowego (7)	4,0	0,3	20,0	0,7	9,9	0,7
Przemysłu Chemicznego (8)	306,3	23,1	286,6	10,1	299,9	21,4
Przemysłu Lekkiego (9)	6,5	0,5	7,7	0,3	14,2	1,0
Przemysłu Spożywczego i Skupu (10)	3,0	0,2	20,1	0,7	6,1	0,4
Budownictwa (11) i PMB	151,4	11,4	121,0	4,3	41,1	2,9
Leśnictwa (12) i Przemysłu Drzewnego	9,0	0,7	34,2	1,2	162,1	11,6

KEY:
1. Departments:
2. In general
3. Amount for: power engineering and atomic energy
4. Mining
5. Metallurgy
6. Heavy and agricultural machines industry
7. Machine industry
8. Chemical industry
9. Light industry
10. Alimentary industry and purchasing center
11. Building and building materials industry
12. Forestry and timber industry

Solid Waste Disposal

Toward the end of 1979, there were over 846 million tons of solid industrial waste at storage yards, at dumps and in sludge ponds; during the same year close to 24 million tons was added. In 1979, 165 million tons of waste were dumped, of which 94 million tons were economically utilized. The area of storage yards, waste dumps and sludge ponds, where solid waste is accumulated, covered 8,429 hectares, of which during the same year only 214 hectares were reclaimed. Most accumulated waste originated from operations of the following ministries: metallurgy (38.1 percent), mining (29.1 percent) and building trades with the building materials industry (13.3 percent).

Municipal waste is particularly cumbersome, despite its smaller volume. At the end of 1979, 34.8 million cubic meters of this waste accumulated on 1,225 public and permanent dumping grounds. These grounds covered 2,267 hectares. Less than 1 percent of the total waste had been utilized for composting. Close to 40 percent of municipal dumping grounds are in poor sanitary condition and--according to the evaluation by the sanitary inspectorate--constitute an environmental hygienic threat.

Investment outlays for the neutralization and management of industrial waste during the years 1975-1979 amounted to 898; 1,346; 1,713; and 1,596 million zlotys, respectively (at current prices). The majority of these outlays was financed by the following departments: metallurgical, power engineering and atomic energy, chemical industry, mining, forestry and timber industry. They participated almost entirely in investment outlays in this area. The high degree of investment of the department of forestry and timber industry is particularly praiseworthy, because the wastes of this branch of industry are the least harmful to the environment and are useful, due to soil biomineralization.

* * *

The socialistic socioeconomic system--the basic aim of which is to satisfy social needs by optimal utilization of resources, including environmental--is in particular bound to environmental protection by realizing rational principles of environmental policy. With this aim we have developed adequate rules and established special institutions but we are short of the means to realize the protection measures. Outlays for the infrastructure of environmental science lag not only behind the needs, but even behind the possibilities of our national economy, particularly limited in the last period.

To its disadvantage, Poland differs from the level of investment for environmental protection in other countries, with its contribution of slightly more than 1 percent of the national income, considering other outlays not mentioned by GUS. In several highly developed countries analogous outlays constitute over 2 percent of national gross receipts, not even taking into consideration the much higher base, this represents a share approximately three times higher, In this context the treatment of outlays in this area--as expressed in a drastic limitation of outlays for the environmental-technical infrastructure during recent years (table 6)--arouses concern.

Table 6. Investment Outlays in the Area of Neutralization and Management of Industrial Waste--According to Departments (current prices)

(see next page)

(1) Resorty	(2) Ogółem	
	1978	1979
Ogółem	1 712,0	1 506,1
z tego Ministerstwa: (3)		
Energetyki i Energii Atomowej (4)	[illegible]	[illegible]
Górnictwa (5)	112,5	[illegible]
(6) Hutnictwa	712,2	[illegible]
Przemysłu Maszynowego (7)	15,6	6,4
(8) Przemysłu Chemicznego	128,8	[illegible]
Przemysłu Lekkiego (9)	0,2	0,2
(10) Przemysłu Spożywczego i Skupu	0,8	—
Przemysłu Maszyn Ciężkich i Rolniczych (11)	6,6	1,8
Budownictwa i Przemysłu Materiałów Budowlanych (12)	2,2	2,7
Leśnictwa i Przemysłu Drzewnego (13)	181,2	[illegible]
Komunikacji (14)	1,8	1,2

KEY:
1. Departments
2. In General
3. Ministries:
4. Power engineering and atomic energy
5. Mining
6. Metallurgy
7. Machines industry
8. Chemical industry
9. Light industry
10. Alimentary industry and purchasing centers
11. Heavy and agricultural machines industry
12. Building and building materials industry
13. Forestry and timber industry
14. Transportation

Every country, including Poland, can postpone the burden of considerable outlays for environmental protection, in order to accelerate economic growth, expressed by an increase of per capita goods production. The alternative of such a postponement may be a deterioration of environmental quality, with future restoration --if at all possible--costing considerably more. Prevention of environmental pollution and its rehabilitation--in order to reinstate the biological equilibrium--are technically possible, socially necessary, ecologically indispensable and economically profitable, although we cannot yet measure, or even appreciate, its profitability. A proper place must be given to the problems linked with the protection and formation of the environment. Life in a healthy environment, pleasing the eye and the ear, constitutes a condition sine qua non of a properly understood quality of life, which often--under conditions of every-day shortcomings--we do not perceive.

Sources:

1. Environmental situation, threat and protection 1973. GUS, Warsaw 1974.
2. Environmental protection 1975. GUS, Warsaw 1976.
3. Environmental protection and water management 1978. GUS, Warsaw 1979.
4. Environmental protection and water management 1979. GUS, Warsaw 1980.

9841
CSO: 5000/3001

BRIEFS

REFORESTATION PROJECTS--With the appearance of the company, Reforestacion Tecnica, S. A., the myth that projects from 2,000 to 3,000 hectares cannot be carried out in a year has been shattered. Reforestacion Tecnica, S.A. finished and sold in its entirety the "Las Brumas" project, located in Santa Cecilia, jurisdiction of La Cruz, Province of Guanacaste. This reforestation project uses laurel, sown in an expanse of 1,000 hectares. To make the plan feasible, seeds were collected in the area of San Carlos, Sarapiqui and Santa Cecilia de la Cruz. The year before, Reforestacion Tecnica developed a new system in "Las Brumas" with the direct sowing of seedlings, thus eliminating the propagating bed. The innovative technique is still in an experimental stage, but it is moving forward because it means a saving of economic resources and of time. With this process, the "suedo cutting" succeeds in a shorter period compared with the usual method. The "Las Brumas" project is the biggest and the first of its class in the county. It has been visited by experts from the United Nations, from the Food and Agricultural Administration, from the University of Costa Rica and from the Technological Institute, who have given out very favorable opinions. Benjamin Olivares, from FAO, was in Cost Rica for several months observing the financing programs for the forestry sector. He expected to find an elementary operation, but was amazed at the advances achieved. [Text] [San Jose LA REPUBLICA in Spanish 20 Sep 81 pp 14-15] 9678

CSO: 5000/2009

CONSERVATION EFFORTS, PRESERVES IN MATANZAS NOTED

Havana GRANMA in Spanish 15 Sep 81 p 2

[Article by Raisa Pages]

Cienaga de Zapata--The first thing a visitor sees when he arrives in Cienaga de Zapata is enormous barricades urging protection for the flora and fauna in the municipality, so rich in natural, economic and historic resources.

But the campaign is not limited to signs, as we learned at the Cienaga de Zapata Integral Forestry Enterprise, where this year, a budget of over 50,000 pesos has been devoted to improving the habitat of important species of flora and fauna.

In Cienaga de Zapata, a municipality with an area of 3,300 kilometers south of Matanzas, 12 percent of the country's forestry resources are found. Its wooded areas occupy an area of 426,767 hectares and contain countless top-quality species such as cedar, mahogany, oak, ocuje, jocuma, jucaro, soplilo and others.

In addition to being of great economic value, these forests are a habitat for wild fauna where many species of great worth are found: deer, crocodiles, flamencos, ducks, doves and many other animals which are also in danger of extinction. Some of these are found only in this region.

Forestry Conservation

Previous to 1959, the territory was looted by the bourgeois landowners, only anxious to increase their flow of money, a well-known fact. During the early years of the revolution, measures were taken for the conservation and development of these natural resources, whose legal expression is the Law for the Protection of the Environment and Natural Resources.

In an interview with GRANMA, Integral Forestry officials said that based on this legal instrument, it is still necessary to adopt a broader line more in keeping with the objective situation with respect to the conservation of forestry resources and the fauna.

Julio Ortega, director of the enterprise in question, said that "it is not a matter of totally banning the cutting and working of forestry resources, so indispensable to the development of the economy. We have to continue to produce lumber, charcoal, and so on, but while strictly complying with technical regulations established for the forestry area by the Ministry of Agriculture. We must cut trees, but only those in the proper condition and those needed to meet overriding needs."

Ortega continued: "Since we, the government representatives, who are responsible for complying with the orientations emanating from the party and government covering the conservation of the flora and fauna in the municipality, we are carrying out a plan of work in accordance with that protection."

Last year, forestry ordinance was begun in the enterprise, the most technical and scientific task with regard to the protection and optimum use of our resources. This work will soon be concluded.

"We saw the indiscriminate cutting that was done until only a short time ago. Now cutting is done only in areas authorized by the Ministry. It is not permitted to take out precious woods beyond what has been strictly planned and we have suspended permits to private parties for cutting wood for individual purposes."

In order to improve the most neglected wooded areas, the enterprise has specific enrichment tests that are yielding positive results. At the same time, attending is given to how growth proceeds in natural woods, with briar and harmful brush being eliminated.

Cienaga de Zapata Woods Belonging to the Integral Forestry Enterprise

Historic and recreational woods	4,600 hectares
Woods protecting fauna	63,000 hectares
Woods for special protection purposes	3,850 hectares
Forests for production	187,583 hectares
Protection for production forests	78,746 hectares
Protective woods	3,087 hectares
Production forests growing	85,000 hectares
Deforested areas	640 hectares

Fire Plan

Signs seen everywhere in Cienaga warn of the great fire danger in the area. Sometimes a mere cigarette butt thrown into the mountains causes fire. That is why an information campaign is being waged to check the possible causes of these fires that destroy the plant layer, erode the soil and have a negative effect on the fauna of the place affected.

The plan includes the construction of fire trails and fire stations have been set up. The forestry workers themselves have set up crews to help with the strict supervision. In addition, fishermen and hunters have been warned not to start bonfires. They are a major source of fires and have been banned.

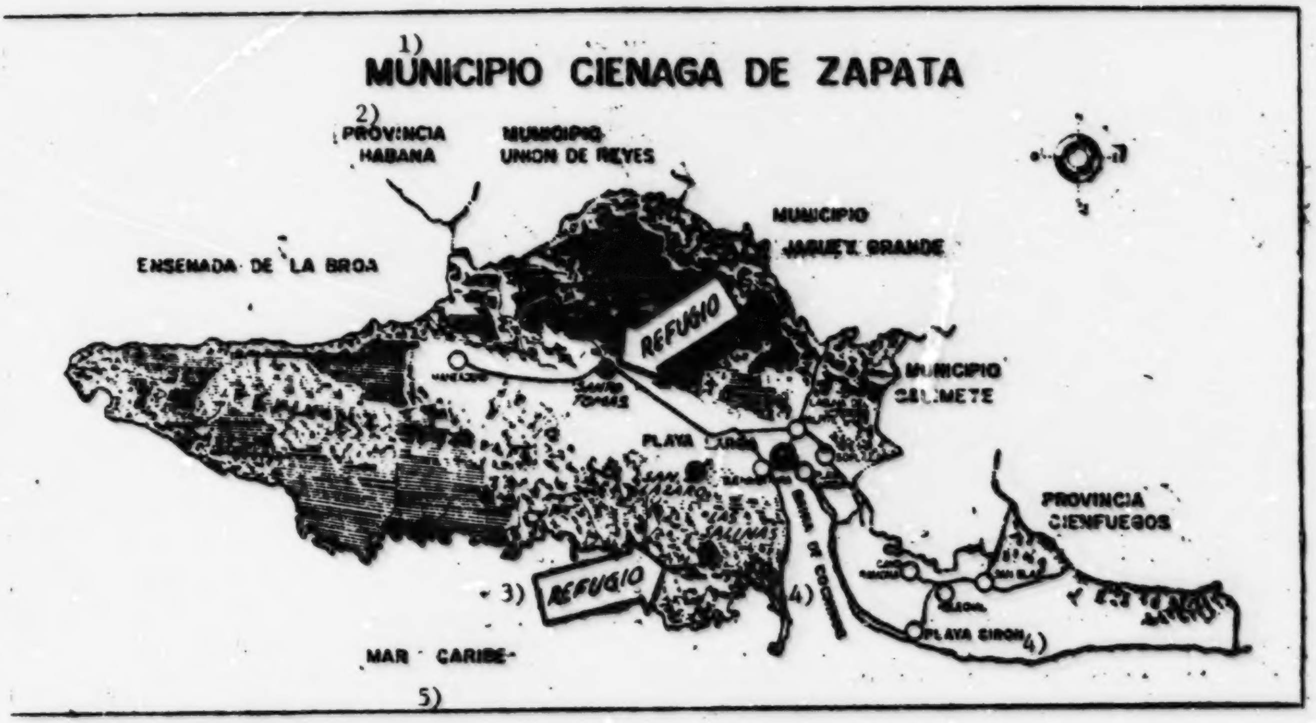
Diagnostic Development

As we previously pointed out, Cienaga de Zapata is one of the richest areas with respect to valuable species of Cuban fauna, basically birds, 80 percent of all of those in the country are in the woods here.

One important element in the supervision of all these conservation measures is the forestry guard. There are 18 in Cienaga, but due to the vastness of the territory, it is necessary to increase the figure to 25 or more. The job requires an eighth-grade education and knowledge of the flora and fauna, Julio explained. He added: "Those we already have on the staff are taking courses on these topics in order to make their work more efficient."

There are two natural refuges in Cienaga, west of Playa Larga. One is the Salinas zone, with 38,000 hectares. The other is in Santo Tomas, with 14,000. Human activity is banned in these places and they are gathering points for migratory birds.

"We already have 16 head of deer (to increase to 100), 92 pairs of English ducks, pheasants and wild boars to breed with the wild pigs."


1)
MUNICIPIO CIENAGA DE ZAPATA
2)
PROVINCIA HABANA
MUNICIPIO UNION DE REYES
MUNICIPIO JAGUEY GRANDE
ENSENADA DE LA BROA
REFUGIO
MUNICIPIO CALIMETE
SANTO TOMAS
PLAYA LARGA
PROVINCIA CIENFUEGOS
3)
REFUGIO
4)
BAHIA DE COCHINOS
PLAYA GIRON
4)
MAR CARIBE
5)

Key:

1. Municipality
2. Province
3. Refuge
4. Bay of Pigs
5. Caribbean Sea

11,464
CSO: 5000/2013

BRIEFS

LAKE DECONTAMINATION FINANCED--FYDEP [National Agency for the Economic Promotion and Development of El Peten] will invest a total of 3 million quetzals in the decontamination of Lake Peten Itza, according to the statement made yesterday to PRENSA LIBRE by the head of that agency, Col Jorge Mario Reyes Porras. He pointed out that one of the first steps in this direction is the installation of drainage ditches in Santa Elena, San Benito and Ciudad Flores. This will prevent black water from continuing to contaminate the lake. He pointed out that subsequently the second phase of drainage installation will continue in the lakes around the villages of San Jose, San Andres and a few others located around Peten Itza. As soon as the FYDEP budget is approved, he emphasized, the work will begin next January. Furthermore, the sources of water supply will be improved, filling the distribution network with drinking water and other measures will be taken to improve the health of the people of Peten Itza. Colonel Reyes stated that the contamination of the lake became more acute as a consequence of the flood. However, the company has not remained idle, since, on instructions from President Lucas Garcia, ongoing works have been carried out for some time to attenuate the consequences of the phenomenon. [Text] [Guatemala City PRENSA LIBRE in Spanish 27 Aug 81 p 2] 8956

CSO: 5000/2171

ENVIRONMENTAL PROBLEMS PERSISTING, MINISTER CHARGES

Bridgetown ADVOCATE-NEWS in English 19 Oct 81 p 10

[Article by Paget Defreitas]

[Text]

KINGSTON, Jamaica, Sunday, (CANA) – The Arawaks called the island Jaymaca — land of wood and water. The wood is not quite as plentiful anymore for over the centuries the forests have been denuded for timber and fuel and to create space for development.

The water is still abundant. The island is crisscrossed by rivers and streams that once provided bountiful fare for the Arawaks and successive generations of Jamaicans.

But now there are fears that the water might not be there anymore.

For many of the rivers and streams are polluted, smelly, almost stagnant quagmires unable any longer to support aquatic life. Also there are serious threats to ground water resources – the result of years of indiscriminate use and improper control.

But the damage of water resources are not the only failures in environmental management, which Junior Health Minister, Karl Samuda, has told Parliament is costing the country an estimated J$200 million a year.

It was an unhappy picture painted by Mr. Samuda of the threat to the Jamaican environment and the possibility of the negative impact the situation could have on life here.

There was urgent need for the strengthening of existing environmental control machinery and the development of a multi-ministry: multi-sector programme to deal with the problems, the Junior Minister said.

Said Mr. Samuda: "We in Jamaica suffer from both the environmental health problems of the developing countries as well as the problems of the industrialised countries.

In analysing the basic factors causing or contributing to a number of diseases in the country, environmental factors rank high.

"I am referring to infective and parasitic diseases, diseases of the respiratory system, cancer and other diseases and disorders."

He continued: "It is estimated by the Environmental Control Division (of the Health Ministry) that because Jamaica has not yet developed effective machinery for environmental control, the annual economic cost to the country is over J$200 million.

"This arises from extra costs for hospitalisation and treatment of environmentally-induced illnesses, loss of production due to uncontrolled working environment, the increased cost of construction and land development destruction or damage to crops, livestocks, soil, water, air and natural resources."

Statistics provided by Mr. Samuda showed that 200 000 Jamaicans in rural parishes are not supplied through any central water system and they use rivers and springs which are easily contaminated.

A further 300 000 people who get their supplies through central systems are using completely untreated water. And of the remainder who are supplied through central systems 36 per cent of the water they use is not entirely treated.

Added Mr. Samuda: "Tests carried out by water quality personnel show that about 30 per cent of approximately all rural water supplies contain ... bacteria from sewage and faecal waste.

"There has been a case of a dairy being supplied with water being supplied from a contaminated source, with the result that contaminated milk was reaching the consumer.

"The same water source was used to supply a north coast hotel. There has even been a case of contamination found in the water used for supplying ships docking in one part of the island."

Mr. Samuda told Parliament: "Many of Jamaica's most important rivers have stretches of tributaries that are badly polluted. The Black River in St. Elizabeth has been contaminated by oil, is discoloured, has suffered a depression of oxygen levels and an increase in suspended solids ... the Elim and Grass rivers in the same parish has been foul-smelling, discoloured and unable to support aquatic life.

"The shrimp industry in middlequarters was almost destroyed by pollution and its use as a source of water supply has been severely curtailed.

"In St. Catherine (east central) tributaries of the Rio Cobre have reached a stage where they are virtually like open sewers with organic waste. Sections of the Rio Cobre itself are bereft of oxygen. The Ferry River has developed a high sodium content and conductivity, making fish life almost a thing of the past."

The damage to surface water sources, however, is not the entire problem.

Recently a ban was lifted on building in one section of the Liguanea Basin in Kingston and St. Andrew because of damage done to underground water by nitrates from sewerage systems."

And the Linstead Basin in St. Catherine, a great water source with tremendous capability for supplying that parish and Kingston, has been threatened by the huge red mud an effluent left after bauxite has been processed into alumina) lakes.

These two examples are well known but there are similar problems elsewhere.

The sea too has not escaped man's encroachment and the Kingston harbour, which once had a reputation for being among the loveliest in the world, is now "dead".

According to Mr. Samuda, in 1979 it was estimated that 12 million gallons of partially treated or untreated sewerage was being discharged daily into the harbour from adequate or malfunctioning sewerage plants. For industrial waste water, the amount daily was three million gallons.

In the rural areas the respective figures were 3.5 and three million gallons.

There is, compared to the industrialised countries, no serious air pollution problem here. But there is growing cause for concern.

Apart from the increasing numbers of vehicles discharging carbon monoxide into the atmosphere, dust problems are created in certain areas by a cement plant situated outside Kingston. Quarrying work also contributes to the dust problems.

There are also other problems associated with the bauxite alumina industry.

Earlier this year, angry residents complained about damages property, their health and chemicals escaping during the processing of alumina to bauxite and demonstrated at plants.

At the time of the demonstrations, two bauxite companies announced they were upgrading equipment to minimise the fall-out and any possible dangers to nearby communities.

Inside the plants themselves, the bauxite companies have stringent safety measures for their employees, but according to Mr. Samuda the same cannot be said for other companies.

Said Mr. Samuda: "Recently one worker had to be hospitalised as a result of arsenic poisoning at his workplace. Nine others were tested for arsenic in their blood and five of these had arsenic above the allowable limit.

"In factories where blood tests were carried out in 1979, it revealed that over 50 per cent of the employees had lead in their blood stream above the allowable limit."

In February a newspaper story stated that people who lived around a factory in St. Catherine that supplies battery terminals were suffering from lead poisoning.

Children in the area were reported to be deformed, apparently victims through affected parents. Other children were said to have rashes and sores from coming in contact with the substance.

Noise is also a developing problem. And Mr. Samuda told Parliament that 12 workers at a factory had their hearing impaired.

To come to grips with the environmental problems Mr. Samuda suggested that there should be greater co-ordination between such agencies as the National Resource and Conservation Department (NRCD), which comes under the Ministry of Mines and Natural Resources, and the Ministry of Health's Environmental Control Division.

Mr. Samuda also suggested that the budgets and personnel of environmental agencies should be increased.

CSO: 5000/7508

REFORESTATION PROJECT IN ZELAYA

Managua BARRICADA in Spanish 18 Sep 81 p 9

The revolution has an immense task to perform in northern Zelaya: Restore and return to productivity the 300,000 hectares of pine which were totalled leveled by the transnationals.

Of those 300,000 hectares, 200,000 can be improved by means of natural reforestation; but the remaining 100,000 can be woods again only with the aid of man: They will have to be reforested artificially. And this task has already begun, with the help of the Mexican government: It is the Reforestation Project of the Northeast.

To meet this great effort, financing from the Inter-American Development Bank (BID) for $8,500,000, with counterpart funds from the revolutionary government of $1,500,000 are counted on during the next four years.

For this first year of work a rather modest plan has been developed: Reforest artificially 500 hectares. In this stage, 300 heads of family are working for its realization, and to achieve it, the assistance of the popular organizations by means of rotating Sundays is necessary.

These days of voluntary work have already begun and the Sandinist armed forces and the miners have been outstanding in their participation.

The Reforestation Project of the Northeast consists of two different aspects. On the one hand, reforestation strictly speaking, financed by BID, in which technical assistance from Mexico is being relied upon. On the other hand, the industrial treatment of the wood from the pine tree, with the installation of a pulp industry for the manufacture of paper. This second aspect is beyond the project stage and it is hoped that the plant will be functioning during the year 1985.

When this plant is working, it will generate a great number of jobs, raise the standard of living of the area, and furnish sizeable inflows of foreign exchange by means of the international commercialization of its different products.

This plant is of mixed capita. In it, the governments of Nicaragua and Mexico will invest $85,000,000. The details of this investment are completely approved by both governments.

9678
CSO: 5300/2009

EAST AFRICAN MARINE RESOURCES THREATENED BY SEA POLLUTION

Dar es Salaam DAILY NEWS in English 23 Oct 81 p 1

[Article by Simeon Ileta]

[Text]

AN environmental expert has expressed concern that marine resources within the East African region were facing a serious threat due to sea pollution.

Tunisian born Moncef Rishi of the Nairobi-based United Nations Environment Programme (UNEP) Office for Africa has said in Dar es Salaam that the East African ecosystems faced several threats which could harm the region's marine resources.

Ndugu Riahi, who is leading a fact-finding mission of seven scientists currently in the country under UNEP sponsorship to investigate resources and environmental problems of eight East African and Indian Ocean countries, said some damage had already been done to coral reefs whose productive and heavily fished zone is vulnerable to pollution and silting.

He said fishing with dynamite and poison has further destroyed some areas thereby threatening the resources.

The expert, whose team has been meeting officials in ministries and institutions dealing with environment since they arrived in the country on Monday, said deforestation of mangrove areas to provide firewood and other products had already affected fisheries and altered the environment in other Indian Ocean areas and threatened to become a problem in East Africa.

The team comprising a conservation expert, an industrial engineer, a land use planner, a marine pollution expert, an oil pollution control expert and a sanitary engineer, is expected to complete its work within the next two months.

The project will cover a vast coastal and marine area of Somalia, Kenya, Tanzania, Mozambique, Madagascar, Mauritius, Seychelles and Comoros.

Ndugu Riahi told the *Daily News* that among other things, the team would investigate on oil pollution control, the conservation of coastal and marine resources and ecosystems, pollution levels and hazards to human health, marine and coastal area development and pollution from industrial sources.

He said the reports of the team would serve as principal working papers of a workshop of experts from the East African region which is expected to be held early next year at a venue not yet known.

The workshop's conclusion and the mission's reports would be transformed into the first draft of an East African action plan, the final version of which would most likely be agreed upon at an intergovernmental conference in 1983, he said.

Ndugu Riahi further said the reports of the mission would be submitted to the governments concerned to enable them have a good picture of the resources and environmental problems of their coastal areas, and a clear idea of what to do about them.

While in Tanzania, the experts have been separately meeting and interviewing officials and institutions dealing with environment, and are expected to hold a general meeting tomorrow.

The team which has already been to Kenya and Mozambique leaves Tanzania tomorrow for Comoro, Mauritius and Madagascar.

CSC: 5000/5612

BRIEFS

KGALAGADI DROUGHT RELIEF--The Ministry of Agriculture will spend about P83 000 to water communal grazing areas at Tshanetshane, Kgawa, Khuis, Kilonkwaneng and Middlepits, as a drought relief measure. This was disclosed by Tsabong District Agricultural Officer (DAO), Mr N. M. Mokhalee in an interview with BOPA recently. The money was made available after a Presidential Directive was passed declaring these areas drought stricken. The villages are all in the Southern Kgalagadi. Mr. Mokhalee told BOPA that residents of these villages will help dig trenches since the project is under the self-help scheme. He said those who will be engaged in digging trenches will be paid about P1.00 a day. The DAO said materials were expected to arrive in a week's time. He said an Assistant Water Engineer will be stationed in Tsabong to supervise the implementation of the project. According to Mr Mokhalee work will start at Tshanetshane, Kgawa and Kolonkwaneng where boreholes to pipe water from, had been drilled. At Middlepits and Khuis, work will start later because negotiations about whether to use a government borehole, were still to held. Mr Mokhalee further disclosed that Middlepits residents were engaged in two self-help projects, a storage for Karakul pelts, wool and grapple plants, and another project, clearing bushes to make fire breaks. The DAO said meetings were to be held at Tsabong and neighbouring villages to urge farmers to organise themselves and build storages like the one being built at Middlepits. [Text] [Gaborone DAILY NEWS in English 28 Oct 81 p 3]

CSO: 5000/5616

RIVER POLLUTION THREATENS HEALTH OF POPULATION

Libreville L'UNION in French 23 Sep 81 p 2

[Article by M'Far Mbala-Mombo]

[Text] As all other provinces, the province of Ogooue-Lolo possesses a number of entities in charge of improving the health of the population. Indeed, it is equipped with general medicine, surgery, pathology, endemic diseases and sanitation services. If other services are judged satisfactory, the same cannot be said of the sanitation ones.

Indeed, the population of Koula-Moutou has never seen the public health services at work, even though quite a number of cases under its authority are flagrant ones. The Bouenguidi River, which flows behind the provincial hospital, is polluted by dirty dressings and the patients' excreta. The Bouenguidi Hotel throws into the river great piles of empty cans.

With pollution acquiring alarming proportions, the concern of the people who use this river for swimming or household consumption can easily be understood. Moreover, a recent investigation of the endemic diseases service in cooperation with the departing head physician has shown the presence of bilharzia, the parasitic worms that cause bilharziasis.

In addition to this, there is the problem of health standards in shops. Their owners sell drinks to consumers in demijohn tops. These notorious "plastic glasses" are washed and rinsed all day long in the same dishwater, which the owner's assistant never thinks of changing. These problems are crying out for the municipality's attention so that the health of the people can be protected and improved.

CSO: 5000/5615

BRIEFS

WATER ACT LAW--Water from Lake Victoria could be pumped to transform some of Kenya's dry areas, but funds were a limiting factor, the Minister for Water development, Mr Moses Madavadi, said yesterday. Mr Mudavadi also revealed that a law to deal with factories polluting water by discharging waste into rivers and other water courses was under way. The law was part of a Water Act which will soon be tabled in Parliament, the Minister said. He made the points during discussions with the Swedish Ambassador to Kenya, Mrs Cecilia Nettelbrandt, who paid a courtesy call in the Minister's office at Maji House in Nairobi. Touching on Kenya's water demands generally, the Minister told his visitor the Government wanted more attention to be paid to rural areas where the bulk of the people lived. Without clean water, he said, the rural community was exposed to diseases. The Ambassador informed the Minister that she would like to tour some of the Swedish-funded projects in the country. She noted that her country had been more involved in water development in Kenya more than in any other fields, having spent Shs. 240 million since 1970. She said she wanted to tour some of the projects so as to make a fresh report to her Government. Mr Mudavadi, who was with his Permanent Secretary, Mr J. H. O. Omino, and three other senior officials of the Ministry, informed Mrs Nettelbrandt that some of the Swedish-funded projects had not yet been completed, not because of lack of funds but due to other technical issues. [Text] [Nairobi THE STANDARD in English 23 Oct 81 p 5]

RHINO POACHING--Poaching reduced Kenya's rhino population from 8,800 in 1969 to a mere 81 last year, Vice President and Minister for Finance Mwai Kibaki said on Thursday night. Mr Kibaki said this when he toured the Ministry of Environment and Natural Resources stand at the Nairobi International Show. The Vice-President was the guest of honour at the Show yesterday. Attendance continued to swell as the show entered its fifth day. Mr Kibaki was told at the stand that in 1969 Amboseli had 50 rhinos but only 6 remained last year. Samburu had 1,500 but now had only 18. The rhinos in Tsavo had been reduced from 7,000 to 48, while in Meru National Park the number had fallen to 9 last year from 250 in 1969. [Excerpt] [Nairobi DAILY NATION in English 26 Sep 81 p 5]

CSO: 5000/5610

BRIEFS

UN ENVIRONMENTAL PROTECTION DELEGATION--A delegation from the UN environmental protection program (UNEP) has been in Mozambique since 12 October to prepare a report on the problems related to the region's environmental resources. The document will be presented to the group of Eastern Africa experts who will meet at the beginning of next year. Following this preparatory meeting, another report will be made to be presented to the intergovernmental conference that will be held in Nairobi in 1983. This team is formed by 7 scientists who will study, among other subjects, the control of marine pollution, the conservations of coastal and marine ecosystems and the danger levels of man-made pollution. [Text] [Maputo TEMPO in Portuguese 25 Oct 81 p 3]

CSO: 5000/5617

BRIEFS

FEARS OF DROUGHT DISPELLED--The recent cold, rainy weather over much of Zimbabwe has disturbed the nation's farmers: they are worried what to expect next. Despite assurances last week from the Department of Meteorogical Services that a cold, wet October is no barometer for the rest of the growing season, many farmers fear that the early rains could spell drought later. A Commercial Farmers' Union spokesman reported some cases of hail and rain damage to ripening winter wheat as well as reaping difficulties. "The combine harvesters just can't get into some of the lands." But losses were impossible to estimate until affected crops had been harvested, although these were not expected to be drastic. The cold, wet spells had been generally followed by warm sunny periods which had quickly dried out the crop. The rain came too early to affect this season's maize crops, the spokesman added. Met. men said that the farmers' fear that a wet October signalled a drought were unfounded. "Our records show no trend to support this belief...rain in October has absolutely no significance." October normally brought dry, cloudless weather from Tanzania, but this year the prevailing air flow had been from west to east, which, accompanied by bands of disturbed air in the upper levels, had brought far more cloud than usual. The month had produced five spells of guti, particularly over the southern half of the country. Twelve days had been decidely cooler than normal and the average mean temperature for the month was down from 29°C to 27°C. A spokesman said that this year's cloud seeding operations were due to start next Monday and would continue until January 23. Care would naturally be taken to avoid areas under wheat. [Text] [Salisbury THE SUNDAY MAIL in English 1 Nov 81 p 4]

'OPERATION RAINDROP'--A nationwide cloud-seeding operation, run by the Meteorological Department, begins next Monday, a spokesman for the operation announced yesterday. Volunteer members of the Air Force of Zimbabwe will take part in the operation that will last until early April. "The operation can save crops during drought until the rain falls again," said the spokesman. "Suitable large cumulus clouds are seeded by firing special chemical cartridges into them; these cartridges produce a mist of tiny silver idodide crystals," he added. The spokesman said that a successful seeding operation produces about 100 000 tonnes of extra rain--about 5mm--over 20 sq km. The operation is expected to cost approximately $200 000, but the spokesman explained that this sum represents about one-fifth of the cost that an American firm of cloud-seeders would spend on the project. Cloud-seeding operations will not be carried out in areas where the harvesting of winter crops has been delayed, because excessive rain may be detrimental to the crops.--ZIS [Text] [Salisbury THE HERALD in English 5 Nov 81 p 6]

CSO: 5000/5613

KAZAKH ENVIRONMENT MONITORING CENTER'S WORK REVIEWED

Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 25 Sep 81 p 4

[Article by E. Poznyak, chief engineer of an environment pollution study and control center: "Under the Control of the Atmosphere"]

[Text] In accordance with the decisions of the 26th CPSU Congress and the regulations of the USSR Constitution serious practical measures on environmental protection are being carried out in our country. In the USSR laws have been adopted on water, land, the interior of the earth, and forest resources. On 1 January 1981 the USSR Law "On the Protection of the Air" went into effect. The same law has been adopted by the Supreme Soviet of our republic. Now practically all of the natural resources necessary for satisfying man's vital needs have been taken under the protection of the state.

The capital investments assigned for the construction of environmental protection facilities will increase during the current five-year plan. As is mapped out by the documents of the 26th CPSU Congress and 15th Congress of the Communist Party of Kazakhstan, there has to be the introduction of waste-free technologies at enterprises and increased protection for water and air against harmful sewerage waters and discharges.

In order to effectively accomplish these tasks it was necessary to improve the system of control over the condition of the environment. For these purposes, at the end of last year a center for the study and control of environmental pollution was created in our republic at the Republic Administration of Hydrometeorology.

Its task is to conduct observations on air, soil, and water cleanliness on the territory of the republic and to supply the information it obtains to various organizations. In order to perform this work modern laboratories have been organized and so has a far-flung network of hydrochemical air observation posts and points. This network is constantly expanding. This year alone it will be reinforced by nine new points which will possess the latest instruments for selecting air probes. At the same time, a large amount of work will be performed by the specialized mobile "Atmosfera" laboratories. They are based on cross-country trucks and permit a determination of the character of the air and the number of harmful substances in it at any distance from the source of pollution. At the present time environmental control laboratories are operating in 19 cities of Kazakhstan.

One of the basic jobs without which the effective protection of clean air is impossible and which has already been performed by the subdivisions of the center is an inventorying of the sources of dust and gas discharges. Its results will help to make more precise plans for measures to protect the air of cities. The accumulated material is being generalized with the help of computers.

Another responsible task which is now being performed by our subdivisions is the development of normatives for the republic's enterprises for maximum permissible discharges into the air. The center is the head organization for the development of such normatives in the republic.

In addition to this, specialists from the center perform expert appraisals on all plans for new and reconstructed enterprises with regard to their correspondence to the requirements of preserving the cleanliness of waters, soil, and air. This makes it possible to avoid errors in planning.

But, of course, all of the center's work obtains practical importance only if its results are used right at the enterprises which have discharge sources. In this connection it should be noted that many combines, plants, and factories are actively participating in accomplishing the task of environmental protection. In particular, the Alma-Ata house construction combine, the "Ekibastuzugol'" production association, the "Kustanayasbest," the Aktyubinsk Chrome Couplings Plant, and other enterprises, after the adoption of the law "On the Protection of the Air," developed concrete measures to sharply reduce air pollution. At the Alma-Ata house construction combine, for example, work has been begun on the reconstruction of the dust and gas cleaning system, and the aspiration of the clay filler shop will be improved. All of this will make it possible to sharply decrease discharges into the air.

These enterprises are orienting themselves not only toward a maximum utilization of the state capital investments which have been released for the construction of gas and dust treatment systems, but are also conducting a search for internal reserves. An improvement of environmental protection work is being actively helped here by labor collectives, rationalizers, and specialists by means of strengthening labor and production discipline, an extensive exchange of experience, and clear actions by the people's controllers.

However, such an approach to the solution of the problems of environmental protection are not yet characteristic of all enterprises. At the Karaganda Metallurgical combine, the Ust'-Kamenogorsk Lead and Zinc Combine and other enterprises allocated capital investments are constantly underutilized and commissioning dates for air protection facilities are not met. The enterprises of the republic's Ministry of Nonferrous Metallurgy, Ministry of Energy, and Ministry of Municipal Housing are exercising poor control over the fulfillment of assignments. Frequently the introduction of new production processes capable of sharply reducing the discharge of harmful substances into the air is delayed for many long years. Above all, this applies to the "KIVTSET" at the Ust'-Kamenogorsk Lead and Zinc Combine and a number of other scientific and technical achievements.

Yet, life itself is demanding that the maintenance of water and air cleanliness in cities become one of the paramount tasks of all enterprises.

At the present time the Alma-Ata center is continuing to perfect the system of pollution control. Construction has begun in the republic on ANKOS--the laboratory of an automated environmental observation and control system. The ANKOS system is outfitted with posts and automatic gas analyzers which make it possible to constantly control air pollution. The information which is obtained on the communications channels goes to the dispatcher computer center for further processing and generalization. All this will help to decrease harmful discharges at the city's industrial enterprises and to improve the condition of the air.

However, close practical interaction between the subdivisions of the center and industrial enterprises is the chief condition for effective environmental protection. The measures which are now being worked out together with them on protecting the air will make it possible to decrease the amount of discharges by 20 percent at the end of the five-year plan.

2959
CSO: 1830/46

MINISTER DEFENDS ENVIRONMENT LAW PROPOSAL

Copenhagen BERLINGSKE TIDENDE in Danish 23 Oct 81 p 2

[Article by Jakob Groes and Rasmus Nielsen: "Minister: Environment Law Will Absolutely Not Be Tightened Up"]

> [Text] Erik Holst denies that the new environmental law means more restrictions on industry and agriculture.

"The environment law will not in any sense be tightened up. There is only a simplification and an increase in the flexibility of court procedures."

With this statement to BERLINGSKE TIDENDE the Minister of Environment Erik Holst rejected the criticism raised by industry and agriculture against the revision of the environment protection law, which the minister is expected to place before the Folketing in a month.

"I am old enough to remember when the first environment law was proposed in 1972. Industry and agriculture were also highly dissatisfied at that time. Today they are happy with it, and for good reason. Last year Danish firms could export environmental equipment and know-how worth 1 billion kroner. They can thank our pioneering environment law for that."

Unusually Open

Erik Holst described the procedure surrounding the preparation of the proposal as unusually broad and open. But behind it there are a number of points which the Industrial Council described as unacceptable as recently as yesterday's BERLINGSKE TIDENDE.

"Just the same, I hope that the Industrial Council will learn that they can live with the law. There is no question of its causing jobs to be lost, and the Industrial Council surely would rather be with us than to stand outside and shout," said Erik Holst.

He would not deny that changes could take place in the preliminary bill, but he emphasized that it contains the intentions which he has had from the start with the new law.

"There is a time for talk, and a time for decision making. The question is whether we have come to the point where I must decide," said the minister.

"The Industrial Council and the Agricultural Council have said that the national organizations are justified in complaining. I do not believe that we will be swamped with complaints from reasonable and sensible organizations such as the Danish Society for the Preservation of Nature. I myself am a member of that society, together with the chairman of the Industrial Council and 155,000 other people.

"If it turns out that one of these organizations behaves foolishly, I must recommend that they be tossed out again. And let me emphasize that the movement will not go with them. To reject Barseback is too narrow a basis for complaint."

Neighborhood Disputes

To the criticism that some say that the new law can not be complained against, Eric Holst said:

"People should not have permission to complain about everything. By far the most environmental cases are really trivial neighborhood disputes, where an oil furnace, for example, smokes too much. That should be decided by the elected officials of the locality. If, on the other hand, they complain to us, we could rapidly expand our administration to twice the size."

The minister of environment wondered about the opposition that the environment law has met in agriculture.

"These are people who live directly from the land, and who must be interested in protecting nature. When the old law was passed the opposition from agriculture was so great that the Liberal Party flew apart. In the meantime our society has acquired a greater understanding of the environment, and the farmers must now be glad that business firms can not do anything they want to in the Danish islands. Then they would look like the Rhine in West Germany."

In The Folketing

Erik Holst will decide this week or next on his meetings with interested organizations. He expects to present his final bill before the government's environment committee on 5 November, and before the Folketing on 17 November.

The previous environment law was passed in 1973 with the votes of the Social Democratic Party and the Conservative Party alone. The Radical Liberal Party abstained from voting, while the Liberal Party and the Socialist People's Party voted against.

9287
CSO: 5000/2015

BRIEFS

ENVIRONMENT AGENCY INCREASING TESTING--The environment agency will use more money in product development. That was reported in a piece which also tells rather briefly of the work of the past year. One of the reports says that between 1,000 and 30,000 Danes are so loaded with the dangerous environmental poison cadmium that they risk having nerve damage. Their backs are most vulnerable. The air pollution laboratory continues taking measurements in seven Danish cities--and there are also plans to investigate the amount of sulfur in the smoke which goes over Sweden. Many Swedish lakes are now so acid that the fish are dying. By the end of 1982 there will be an evaluation of the possibilities of storing highly radioactive waste in salt beds, and a safety report. The fresh water laboratory at Silkeborg has established that maintenance of the Danish islands in some cases conflicts with the counties' goals--and with efforts to protect a well-rounded animal and plant life. In addition to the investigations at the agency's three laboratories, 9 million kroner is spent annually for projects carried out in cooperation with universities and with ATV [Academy of Technical Sciences] institutions. [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 26 Oct 81 p 7] 9287

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END

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Worldwide Report

ENVIRONMENTAL QUALITY

No. 330

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9 December 1981

WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

No. 330

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SWEDISH STUDY SHOWS DECLINE IN BALTIC SEA DDT LEVELS

Stockholm SVENSKA DAGBLADET in Swedish 21 Oct 81 p 6

[Article by Lennart Lundegardh]

[Text] For the first time analyses have now been made that with statistical certainty prove that the DDT level of the Baltic Sea has declined drastically during the past few years. There is a similar, but weaker, tendency for the environmental poison PCB, according to SVENSKA DAGBLADET.

Such results have been obtained from analyses made on herring (caught at the Gavle Bay and outside the city of Karskrona) and analyses of guillemot eggs from Stora Karlso.

The material has been collected by the Swedish Museum of Natural History with museum keeper Mats Olsson as the leader of the project. The chemical analyses are handled by the National Environment Protection Board.

Birds' Eggs Focus of Study

The birds' eggs have proved to be especially useful. The guillemot feeds on fish and it reflects the changes that take place even better than the fish.

The decline is noticeable after 1973. Until then the DDT-levels were at about the same level in the guillemot eggs. It amounted to about 600 mg/kg. In 1980 the average figure had declined to about 200 mg/kg, which thus is a decrease by two-thirds.

Regarding PCB there was instead a slight increase in the level in the birds' eggs until 1975. Thereafter the graph goes from about 350 mg/kg to about 200 mg/kg in 1977, after which the decline has been slower.

The herring material also shows a significant decline in the DDT-levels, but it is actually not possible to read the same for PCB.

"This may have many reasons. We do not know with certainty. But the analyses show that fish may be hard to use as test object, says Mats Olsson. The birds provide more clear-cut information, but we will still have to keep the herring as a good complement."

"An estimate of the average quotient of the DDT-levels and PCB in both herring and guillemots actually show that there was a short-term increase in the PCB-levels in 1973. This supports the probability of the graph that shows an actual decline in the PCB-levels thereafter," says Lars Reutergardh. The 1981 material has not yet been analyzed. The scientists are eagerly awaiting the results. There will be serious disappointment if the graphs go upward again.

The Situation for Eagles Improved

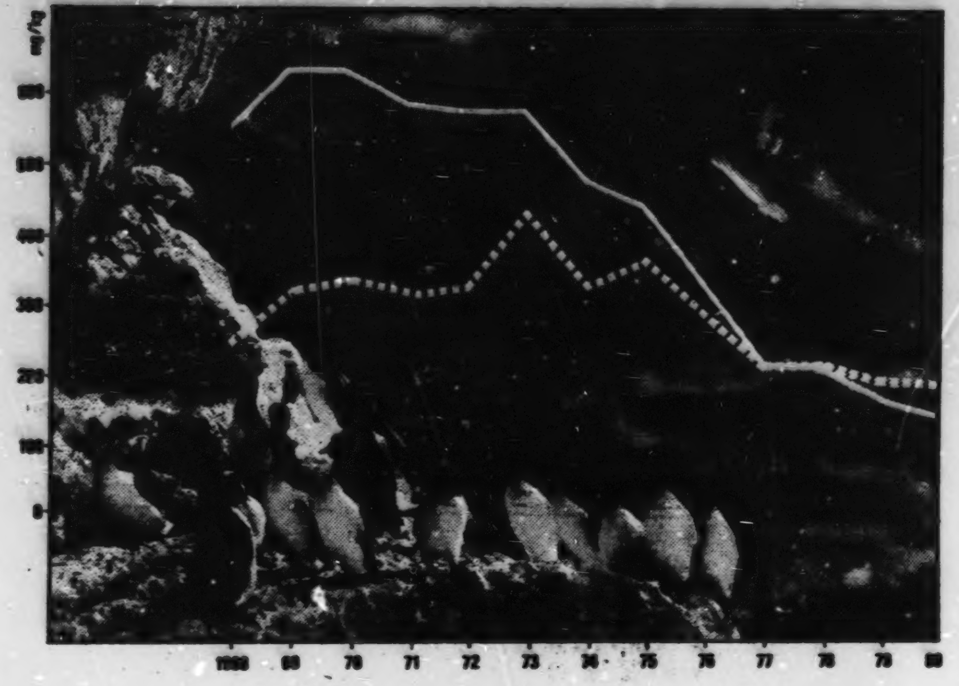
"We will be able to follow the continued development of the Baltic Sea, because these tests have been incorporated into the program for the monitoring of environmental quality (PMK), which is administered by the National Environment Protection Board," says Mats Olsson.

"The results that we are now able to present regarding the DDT decline probably mean that the situation of certain species of birds, for example the bald eagle, has already improved. Measurements of the shell thickness of guillemot eggs will provide further information, since it is known that DDT affects the egg shells.

If the tendency of declining PCB-levels continues there will be a brighter future also for the seals, but that will take a longer time.

"The old seals probably eliminate the PCB from their bodies very slowly and the females, whose reproductive organs have already been destroyed by the substance, cannot be saved, says Mats Olsson. Our hopes are with the seals that are now born."

The Baltic Sea, notorious for being heavily polluted, may be on its way, anyway, toward recovery from a couple of the worst substances known. But there might be other substnaces that the scientists have not yet found.



This is how the DDT-level (solid line) and the PCB-level (broken line) have developed in the eggs of the guillemots of Stora Karlso in 1968 - 1980. Notice the decline after 1973 - 1975. Photograph: Staffan Tragardh.

9662
CSO: 5000/2014

BRIEFS

BALTIC SEALS PROTECTION URGED--The seals of the Baltic and the Cattegat ought to be protected. Seal sanctuaries should be formed and the research about seals should become intensified. This is proposed by a work committee within the Nordic Council of Ministers in a letter to the governments of the Nordic countries. The Council has a special recommendation directed to Sweden and Finland. It concerns the investigation of the possibility to create a seal sanctuary in the Sea of Aland as soon as possible. The Nordic Council of Ministers also wants the Nordic countries to initiate negotiations with other countries regarding the protection of seals within the framework of the Gdansk and Helsinki pacts. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 21 Oct 81 p 6] 9662

CSO: 5000/2014

INDIA

SCIENTISTS NOTE HEALTH HAZARDS OF HOT SPRINGS

Calcutta THE STATESMAN in English 28 Oct 11 p 9

[Text]

NEW DELHI, Oct. 27.—Do the hot water springs in different parts of the country pose a health hazard to bathers? Some of them certainly do, because their waters are highly radioactive, according to two scientists of Bombay's Bhabha Atomic Research Centre.

The thermal springs at Tuwa, near Godhra in Gujarat, are radioactive, say the scientists. The scientists, Mr U. C. Misra and Mr L. K. Joshi, who belong to BARC's air monitoring section and who have conducted extensive studies at Tuwa, say that the Tuwa springs contain high levels of radioactivity and could well prove harmful to the people bathing in it, besides posing environmental radiological hazards.

"The water is not suitable for drinking or bathing and the springs should not be used as a spa", they say categorically in an article published in a journal of the Department of Atomic Energy.

There are hot springs also at Unnai and Lasundra in Gujarat, Sohna in Haryana, Bakreshwar in West Bengal, Tantloi and Rajgir in Bihar, Manikaran in the Kulu Valley, Vajreshwari in Maharashtra and at several other places in the country.

The two BARC scientists say that the hot springs of Unnai and Lasundra exhibit amounts of radioactivity which are slightly higher than normal, although much less than that at Tuwa, in the same State.

Other popular hot springs in the country—especially at Rajgir, Tantloi, Sohna and Bakreshwar—have, according to them, been found to be radioactive and contain Radium-226 and Radon-222.

"Their study is being undertaken as part of an "environmental radiological protection programme", the scientists say.

Mr Misra and Mr Joshi whose study so far relates primarily to the hot springs in the Tuwa region in Gujarat, say that these unquestionably exhibit abnormal radioactivity.

The dose rate cannot still be considered alarming since the bathers may be staying in the area only for a short duration and may not receive continuous radiation exposure at high level. "However, any exposure level higher than the maximum permissible should be avoided", the scientists caution. The Ramkund spring, which is the biggest, is used by the people for bathing.

The scientists note that the Tuwa inhabitants are also subjected to increased natural radiation owing to the thermal springs which discharge large quantities of water every day. It is known that inhalation of radon gas (RN-222), which is present in the atmosphere of Tuwa, and of airborne radium (RA-226) "can give rise to lung cancer"

An equally interesting conclusion of the two scientists is that it is likely that there is an uranium deposit nearby. No measurable amount of thorium or uranium has been found in these springs. But they have high concentrations of Radon-222 and Radium-226, which are the "daughter products" of the Uranium-238 series. The radioactivity in the region is due entirely to them. Hence the scientists' speculation that uranium deposits must be present in the neighbouring region.

CSO: 5000/7013

DELHI CONCERNED OVER DRINKING WATER PROBLEMS

Bombay THE TIMES OF INDIA in English 16 Oct 81 p 13

[Text]

NEW DELHI, October 15 (UNI).

THE Centre has taken a serious view of the tardy and unsatisfactory implementation of the drinking water scheme for problem villages and has directed the states to exercise proper control over allocation of funds.

The total number of problem villages is estimated 190,000. By the end of the sixth plan it is proposed to provide safe drinking water to all these villages, with the exception of those in difficult hilly and desert regions. The sixth plan provides for an outlay of Rs. 1,407 crores in the state sector and Rs. 600 crores in the Central plan.

It is expected that 32,000 problem villages would have been provided with potable drinking water during 1980-81. In the current financial year, 36,000 more problem villages are to be covered.

A recent Central study has revealed that the programme is not being implemented on the desired lines mainly due to three reasons.

First, the criterion for determining problem villages is frequently revised by the states. The planning commission has categorised problem villages as those which do not have an assured drinking water source within 1.6 km., those where the sources of supply are endemic to water-borne diseases, and those where water suffers from excess salinity, iron or fluorides or other toxic elements hazardous to health.

STATES' INEFFICIENCY

Secondly, funds are not being properly utilised. According to the study, the allocation of wells is not being done on the basis of actual local requirements. For instance, in one state it was noticed that 41 wells had been dug in a district which does not have acute water problem while only ten wells were dug in a chronically drought-hit district abounding in problem villages.

Thirdly, in most states influential farmers manipulate allocation of wells in their favour and the poorer sections are not getting the attention they deserve.

An earlier study conducted by the programme evaluation organisation (PEO) of the planning commission shows that in the past the scheduled castes and weaker sections have not gained proportionately from the safe drinking water supply scheme.

The Centre has impressed upon the state governments the need to locate safe drinking water points in such a manner that these communities can benefit fully.

CSO: 5000/7010

INSTITUTE STUDIES PROBLEMS OF HOT ARID ZONES

Madras THE HINDU in English 2 Nov 81 p 8

[Article by B. S. Padmanabhan]

[Text]

"IN five years you will see Rajasthan ber popular not only all over India but also abroad. There is so much potential here to grow ber and export it after processing", claimed a progressive farmer, Nand Kishore Jaisalmeria, when a party of pressmen recently visited his orchard on the outskirts of Jodhpur.

It may sound a tall claim, because for miles and miles around his orchard one can see only sandy land with no vegetation except shrubs here and there but it reflects the extent to which the scientists of the Central Arid Zone Research Institute at Jodhpur have been able to create confidence among the farmers on the prospects of making the desert bloom. However, talking to the scientists of CAZRI, one finds that they have still a long way to go to achieve their goal, as the transfer of technology from lab to land is yet to pick up the desired speed.

Research on arid land

The Institute has to its credit three decades of research work on the problems of desertification and arid zones. Initially, it was set up as a desert afforestation research station and later its scope was enlarged to cover soil conservation work. Subsequently, in 1959 it was reorganised into a fullfledged institute for development of arid zones and combating the spread of desert. If the Thar desert is said to be one of the best-studied deserts of the world, it is in no small measure due to the efforts of CAZRI, which has the largest data-base on arid land.

The importance of CAZRI can be seen from the fact that the arid zone covers about 12 per cent of the country's total geographical area and occupies over 3.2 lakhs square kilometres of hot desert located in Rajasthan, Gujarat, Punjab, Haryana, Andhra Pradesh and Karnataka.

The hot arid zone has a population of 20 million people and 23 million livestock. The huge population is itself the main problem of arid and semi-arid zones because it leads to over-exploitation of the scarce natural resources resulting in ecological imbalance.

Population density

According to CAZRI scientists, the Indian desert is one of the most thickly populated deserts of the world and in the light of the resources available, the population density of 145 persons per square kilometre is considered quite high. In the arid parts, like those of Rajasthan, the population density is 48 persons per square kilometre, compared to three per square kilometre in most other deserts of the world.

Moreover, it has been found that fertility of the human population in the desert is more than that in the adjoining areas. Over two-thirds of the population in the desert area are non-workers, indicating a high percentage of dependency. A majority of the workers are tied to traditional agriculture depending upon rainfed crops and as such they are employed mainly during the kharif season of four months in a year. Another demographic feature is the huge concentration of population in the lower age groups, indicative of the high future growth potential of the population in the region.

Along with the rise in the human population, the livestock population too is on the increase in the desert areas. From 9.4 million in 1951, it has gone up to 15.5 million in 1972. The density of livestock has risen from 72 per hectare in 1951 to 175 per hectare in 1971. The result has been over-use of the grazing land and depletion of natural vegetation resources.

Grazing land reduced

It has been found that the negative

socio-economic effects of the fast growing population on the region, combined with harsh agro-climatic conditions, affect adversely the natural resources. More and more marginal land is being brought under the plough, reducing the area of grazing land, trees and shrubs.

In western Rajasthan,the cultivation on marginal lands has increased by 53 per cent and pasture lands decreased by 22 per cent between 1951 and 1971. The increase in rainfed farming on marginal lands has not only resulted in decline in crop productivity per unit area, but also enhanced soil erosion, degraded soil fertility and led to over-exploitation of ground waters. The CAZRI's efforts are to be viewed against this background.

Exotic species

Studies by CAZRI have shown that about 25 per cent of the area now under cultivation should be brought under cover of grass and trees. Since the local tree species have been found to be not only few in number but also extremely slow growing, CAZRI focused its efforts on the introduction of exotic fast-growing tree and shrub species from iso-climatic regions of the world.

About 200 exotic species from various countries like Mexico, the U.S., Latin America, the U.S.S.R., Africa, Israel and West Asia were introduced. Of these, the species *Acacia Tortilis*(Israeli Babool) has been found to be the best fuel cum fodder species for dry zones. This species has been planted not only in West Rajasthan but in other States as well, including Tamil Nadu, Andhra Pradesh and Karnataka.

Similarly, seeds and seedlings of *eucalyptus cameldulensis* supplied by CAZRI, have been taken by the Andhra Pradesh Forest Corporation and recently the Tamil Nadu Agricultural University has shown interest in it.

Another significant contribution of CAZRI lies in tapping the horticultural potentialities of the arid zone. Ber is one of the main fruit plants of the region and CAZRI scientists have developed the technology to cut short the time required to raise a ber orchard from the normal one year to just four months.

The grafted plants of improved varieties are raised in polythene tube. To make it popular, a programme of budding of two improved varieties on the root stock of the common local bush has been undertaken, which is said to have generated considerable interest among the farming community.

Afforestation

For long distance transport of the grafted ber seedlings a device called 'polypack' has been developed. Techniques for making economic products from desert plants, pasture management, breeding sheep for finer and heavier wood, etc., have also been developed.

CAZRI has also directed its efforts towards control of desertification through afforestation and sand dune stabilisation. Afforestation provides a mechanical obstacle to the free sweep of wind, reducing in the process the wind velocity, soil erosion and evaporation from soil. Sand dune stabilisation is considered an important work as sand dunes with varying frequency are spread over 58 per cent of the arid zone of Rajasthan.

After studying the characteristics of these dunes, suitable techniques have been evolved to remedy the situation. The monitoring of desertification process by CAZRI is reported to have shown that sand dunes and sand sheets occur only as discontinuous patches from the Rann of Kutch to the north eastern part of Haryana and Delhi. According to the CAZRI report, this discounts the theory of transport of sand by wind from the south west and there is no evidence to indicate that the desert is spreading towards the Delhi-Mathura-Agra region.

The question naturally arises to what extent have these techniques found practical application. It is admitted that the diffusion of these technologies among rural masses has been slow. Various methods have been tried and the scientists place great reliance on the Operation Research Projects which involve an integrated approach to the problems of the rural community.

Two ORPs have been taken up by CAZRI, one dealing with arid land management and the other with drip and sprinkler methods of irrigation. The sand dune stabilisation programme seeks to cover more then 2000 hectares of land under sand dune.

Good monetary return

A visit to Daijar village near Jodhpur showed the change brought about by the application of CAZRI technique to one of the lands hit by sand dune. For a number of years this land had been lying fallow and now it has a number of trees of *Acacia tortilis* and *prosopis Juliflora* (Vilayati Babool) with grass of 'Dhaman' and 'Swen' species sown in between the rows of trees. Besides checking the sand movement, the plantations will bring in a good monetary return by way of fuel wood and grass.

When we visited this land, its owner was full of gratitude for CAZRI. He could even now fell the trees and make money but he would wait for another year so that the trees would grow further and give him a higher return. In another project near Bikaner, sand dune stabilisation has been attempted in an area where some years ago a tuberculosis sanatorium was buried under sand.

Talking to scientists of CAZRI and the farmers, one finds that there is a wide gap between awareness and adoption of these technologies by the farmers even in the ORP area. Among the many constraints is cited want of money for initial investment on fencing the land, to protect plants from possible damage from animals. CAZRI has sought to overcome this in a limited way. It offers fencing materials to a few and after some time when there is no longer any danger of damage from animals the fence is removed and offered to another.

CSO: 5000/7014

KARNATAKA SOCIAL FORESTRY SCHEME QUESTIONED

Bombay THE TIMES OF INDIA in English 12 Oct 81 p 21

[Text] Bangalore, October 11--Social forestry intended primary to provide common resources for the basic needs of the population through the creation and regeneration of vegetation everywhere and reduce the destructive pressure on reserved forests is in the news once again.

The Central government has earmarked Rs. 100 crores in the sixth plan to promote social forestry projects throughout the country. Fuel wood plantations will be raised over 260,000 hectares in 100 selected districts, distributing 530 million seedlings.

Mandya, Bellary, Gulbarga, Bangalore and Kolar districts in Karnataka have been identified as locations for a massive social forestry programme. Indeed, the programme has been in existence in the state for some years and has gained considerable momentum. The agricultural refinance and development corporation has already contributed Rs. 2.14 crores through a consortium of 86 banks to the Karnataka forest plantation corporation.

World Bank Aid

On top of this comes a five-year social forestry project submitted by the Karnataka government to the World Bank for financial assistance. The main objectives of the Rs. 60-crore project are to meet the domestic requirements of the rural population regarding fuel wood, small timber, bamboo and fodder, improve the ecological balance, particularly in drier areas and utilise the hitherto unutilised land strips such as road-sides, canal banks, foreshores of tanks, tank-beds and "gornal" land.

A critical analysis of Karnataka's social forestry proposal to the World Bank has now been made by a study team of the Indian Institute of Management, Bangalore, which raises the question whether the "high-sounding" objectives will be achieved, given the present strategy. Instead of special efforts being directed at involving the rural community, in raising and protecting useful species on common and waste land, the thrust is on incentives to farmers to transfer land from food crop cultivation to farm forests.

Again, instead of selecting species on the basis of appropriateness to the needs and purchasing power of the people, the species to which importance has been given (eucalyptus) is neither materially suited to be integrated in the life-support systems of the rural community nor financially within its reach.

This trend of inappropriate choice of the species seems to be at the centre of political controversies around several other World Bank-aided major forestry projects in other parts of the country. In the Himalayas, the chir pine monoculture and the tropical pine in the Baster region of Madhya Pradesh are viewed by the local people as an "attack" on their local life-support systems. In Gujarat, large food producing areas have gone under eucalyptus cultivation.

That there has been a shift from food crop cultivation to farm forestry has also been clearly established in a study on the social, economic and ecological impact of social forestry in the Kolar district of Karnataka. This is the rimit of a conscious policy orientation. Such policy decisions within the jurisdiction of the same ministry (food and agriculture), in which the sucun of the other (agriculture) are an example of "bureaucratic anarchy", says the study team of the Indian Institute of Management. "The right hand does not know what the left hand is doing."

The entire programme of social forestry has emerged as a solution to the mismanagement of conventional forestry, with its commercial thrust and exclusion of the people at large. But the social forestry programme itself appears to be no different. In addition to 15 per cent of the land set aside for timber-growing, 22 per cent of assorted land will be used mostly for growing commercial species.

The contribution of the World Bank project, as the study team puts it caustically, is expected to be marginal at best and destructive at worst. Its basic aim is to satisfy the people's needs and maintain the ecology through the operation of market forces. "These forces, however, are the very ones that led to the erosion of the rural life-support systems".

Social forestry, as practised so far, has not been exactly "social", if Kolar district provides any example. The programme has been in operation in the district for some time. No doubt there is growing consciousness among individual farmers to participate in farm forestry.

In the process, however, a substantial part of the new forest cover has emerged at the cost of food crop cultivation and this shift in land use is found to worsen the conditions of landless agricultural labourers and marginal farmers, both in terms of employment opportunities and availability of food, fodder, fuel and other essential forest produce.

CSO: 5000/7008

PARLEY ON FIGHTING DESERTIFICATION MEETS IN JODHPUR

Opening Session Reported

Madras THE HINDU in English 22 Oct 81 p 9

[Text]

JODHPUR, Oct. 21.

A warning against the present rate of denudation of forests was given by the ESCAP Executive Secretary, Mr. S. A. Kibria, in a message to the ESCAP regional workshop on "Implementation of a plan of action to combat desertification" here.

The message was read out by Dr. K. F. Jalal, Chief of the Environmental Unit of ESCAP.

Mr. Kibria regretted that four years after an action plan was adopted to combat desertification, land degradation due to soil erosion, deforestation, water logging and salinity continued unabated.

"If the present trend of forest denudation continues, the tropical forests of some of the countries in the region might become extinct before the turn of the century. This will trigger off an energy problem, because of a severe shortage of fuel wood in areas affected by deforestation", he said.

Mr. Kibria said the total area of arid and semi-arid zones was on the increase in the ESCAP region. An estimated 378 million people in 27 million square kilometres were affected.

The Rajasthan Chief Minister, Mr. Shiv Charan Mathur, in his address, said the State had 200,000 square kilometres of arid zone, encompassing three-fifths of the area of the State.

He felt that desert control programmes could not be undertaken by poor countries without international assistance.

He regretted that the World Bank had no specific allocation of funds for anti-desertification projects. He urged international agencies to earmark assistance for such programmes.

Dr. O. P. Gautam, Director-General of ICAR, welcomed the delegates.

Editorial on Denudification

Madras THE HINDU in English 22 Oct 81 p 8

[Editorial: "Rolling Back the Desert"]

[Text]

DESERTS AND ARID zones account for 12 per cent of India's geographical area. About 71 per cent of Rajasthan, 20 per cent of Gujarat, 9 per cent of Punjab and Haryana besides small pockets in Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu belong to that category. Lack of the green cover promotes erosion under the impact of high velocity winds leading to the formation of sand dunes which shift constantly. The Thar desert was once thought to be extending at a steady rate eastward, but the more recent studies emanating from the Central Arid Zone Research Institute do not support this view. The density of population in Indian deserts is 61 persons per square kilometre against three persons per square km in the typical desert regions in the world outside. In the Indian deserts, particularly in Rajasthan, surface water is extremely limited and most of the well water is saline. Groundwater is also scarce. The total potential is rated at an average discharge ranging between 40,000-70,000 litres per hour, and this is not copious enough for raising a green cover and stabilising it too. Hence the attempt at trying out certain varieties of trees which can stand the endemic aridity; that seems to be the only way of protecting the homesteads in the desert fringe from the ravages of sand storms.

The Desert Development Board has approved schemes relating to minor irrigation, soil conservation, grassland and pasture development in parts of four districts — Mohindergarh in Haryana, Banaskantha in Gujarat and Barmer and Jaisalmer in Rajasthan. The stress is on rehabilitation of forests in hilly areas, raising of fodder banks, reclamation of saline soils, installation of an underground pipeline system and construction of percolation bunds, check dams and tube-wells. There is as yet no official indication of the actual area of desert converted into a green belt as a result of these exercises. Even the latest statement by the Union Agriculture Minister, Rao [illegible]rendra Singh, rests content with the observation that an integrated strategy for controlling the growth of population of human beings and livestock in the desert belt is on the anvil and that a qualitative and quantitative evaluation of desertification will also be made. It is not that desertification is a phenomenon in the arid zones alone. The Konkan strip is a high rainfall area but the denudation of the forest cover makes the region assume a bleak, desert like appearance. Similar results of denudation are witnessed in many other parts of the country and especially in the mountain terrain of the Himalayas and the Deccan peninsula. Rectification of this type of ecological degradation should receive better attention; otherwise, fertile hills will become high altitude deserts with all that it means in terms of depletion of their catchments.

CSO: 5000/7011

HIMALAYAS FACE PROBLEM OF DENUDATION OF FORESTS

Bombay THE TIMES OF INDIA in English 26, 27 Oct 81

[Commentary by Prem Shankar Jha: "Reforesting the Himalayas"]

[26 Oct 81 p 8]

[Text] I--Causes of Denudation

FOR those Indians in their middle years, who fell in love with the Himalayas in the first blush of their youth, to return to them now is a harrowing experience. Where once there were verdant forests of deodar, blue pine, fir and spruce, tenacious Himalayan oak and quick growing *chir*, there are now only bare hillsides, often carved into tortured gullies and ravines and pockmarked with the raw wounds of recent landslides. From Kashmir to Assam the story is the same. Below 2000 metres there are literally no forests left. The Kulu valley, for instance, once a sea of deodars, some a hundred and fifty feet in height and ten feet or more in girth, is now mostly bare. Tree stumps dot the hillsides, and standing conifers have had their branches lopped off as far as men can safely climb.

Statistics cannot capture the full magnitude of the tragedy. But they tell a dismal enough tale. In Himachal Pradesh, 38.5 per cent of the land area was covered with forests in the mid-fifties. Even this was much below the recommended ratio of 60 per cent. But a recently concluded study by the government has revealed that in the last 25 years the forest cover of the state has fallen to 18 per cent! In other words, nearly one per cent of the land surface of the mountains and valleys of Himachal Pradesh is being stripped of its forest cover every year. Unless the trend is reversed, in 25 years at most, the Himalayas here will be as bare as the mountains of Lebanon.

HAVOC

Himachal, however, is not the worst afflicted state. Neighbouring Uttar Pradesh is far worse off, and further east, in the lower ranges of Nepal one often does not see a single tree for miles on end, on the southern slopes. This havoc has been wrought not by villagers in search of firewood but by the ruthless commercial felling of trees, nine-tenths of it illegal, carried on with the connivance of forest guards whom, as a senior officer of Himachal confessed, "one can bribe with a bottle of country liquor". But timber is not easy to disguise. Since roads are few and far between in the mountains, its movement should have been easy to detect. How then could so much timber have been felled and transported out of the hills with impunity? The answer is that for a variety of reasons, the state governments have left gaping loopholes in the law, which the timber smugglers have been able to exploit with ease.

The state governments have an extensive programme of commercial felling on which they rely for a sizable portion of their annual revenues. In addition, the villagers enjoy the right to fell trees on their private lands. Finally, since the government has declared all other forest lands to be its exclusive domain, it has in exchange given villagers residing in the hills certain timber distribution (TD) rights also called *bartandari* rights. In other words, from time to time villagers are allowed to fell a single tree to meet their needs for a marriage, a cremation, or some other such social purpose.

In theory all these rights are circumscribed by the need to obtain the sanction of the forest department. For instance, only those trees can be felled which have attained a certain maturity. The forest guards identify and mark these in the forest lots auctioned for commercial felling, and no other trees are supposed to be cut. In the same way, trees on private land are marked according to a felling cycle determined every ten years. Trees earmarked for felling under TD rights, are also similarly chosen on the basis of age and spatial dispersion within the forest. But all this works only on paper.

AUCTIONED

The bane of the system is that felling rights are auctioned out by the government to private contractors. Once these have got into a forest, there is no way of stopping them from felling five or even ten unmarked trees for every one that has been marked for felling. Much the same thing has been going on in the case of the trees marked for timber distribution. In theory these cannot be sold, and their use for specific purposes must be verified by the forest guards. But once again, the soaring cost of wood has ensured that all this is forgotten, and the forest guard is bribed into acquiescence. For every sanctioned TD tree, officials in Himachal estimate at least five are felled illegally.

The state governments, therefore, must bear a large share of the blame for the denudation of the Himalayas. They have relied heavily on the auction of felling rights to raise revenues. In fact, in most states the revenue target they set themselves determines how many trees will be felled. But in addition to this, in the system of competitive auctioning, unscrupulous contractors who intend from the outset to fell more than they are allowed, are able to outbid the honest ones. In Himachal, the state government earns three-quarters of its forest revenues, i.e. Rs. 12 crores or more from royalties on the commercial felling of about 200, 000 trees. This amounts to Rs. 600 per tree. Against this the contractors are able to sell a medium sized deodar tree in Amritsar for Rs. 2, 000 to Rs. 2, 500.

Some idea of the incredible damage that the auctioning of felling rights has done may be had from the figures compiled by the Himachal government. In the state some 600,000 cubic metres of timber is felled on a commercial basis, another 100,000 cubic metres is felled on private lands, and 80,000 cubic metres is felled under the timber distribution rights. Since one medium sized deodar gives about 3 cubic metres of timber, this means that just under 300,000 trees are cut down every year, legally. Against this, the forestry department has been planting 20 million trees a year, and claims a survival rate of 25 per cent at the very least. In other words five million trees, i.e. 18 times the number legally felled, have been planted year after year, and have survived. Yet [illegible] years, the area under forests has been halved! The conclusion is obvious: either these figures are eyewash, or upto 30 or 40 trees are felled illegally for every tree that is cut down legally.

One reason for the disparity may be that illegal felling does not account for all of the destruction that is taking place. Another important contributory factor is the tapping of resin from the pine trees. This is done by making a cut in the trunk — technically called a blaze—and collecting the resin that oozes out as the stricken tree tries to heal itself.

So far, resin tapping rights have also been auctioned to the highest bidders. These have then proceeded to maximise their profits by blazing trees mercilessly, until they literally sicken and die. Against a maximum of three blazes that a tree can withstand, tappers are known to make as many as ten. Once again, a small gift ensures that the forest guard looks the other way.

Contrary to the general belief, deforestation is not caused primarily by villagers cutting down trees for fuel. This is because, thanks to the high cost of transport, when a tree is felled it is sawn on the spot and only the valuable timber is carried away. Most of the smaller branches, twigs and of course the pine cones and needles are left behind. These provide ample supplies of fuel in most areas.

WIDESPREAD

But here also, as the area under forests has dwindled, the supply of such byproduct fuel has gone down, forcing the villagers to attack living trees. So far, however, they have contended themselves with lopping off the lower branches. This practice is now so widespread that except in the remotest parts of the Himalayas, such partially denuded conifers are the rule rather than the exception.

Fortunately for the country, there is a growing realisation among some at least of the state governments of the deadly danger that the denudation of the Himalayas poses to the whole of northern India. The Himachal government has begun to implement a comprehensive plan that aims at cloaking fifty per cent of the land surface of the Himalayas with mainly coniferous forests by 2000 A.D.

Ironically, its very first step in this direction proved abortive. In 1980, shortly after the new government came to power, it informed the Centre that it wished to put a complete ban on all commercial felling for five years. It calculated that this would save atleast 3 million mature trees that would have been felled legally. In addition, it would make illegal felling exceedingly difficult. But it wanted the Centre to make good the loss of revenues from forestry operations, which amounted to Rs. 16.5 crores in 1979-80. Unfortunately this proposal was ruled out by the Centre on the grounds that the funds simply were not available. New Delhi proposed however that the state government should keep its revenues constant, and fell progressively fewer trees as the price of timber rose. The state government accepted this proposal and felled 10 per cent fewer trees in 1980-81. Despite this, its revenues from forestry rose to Rs. 18 crores.

[27 Oct 81 p 8]

[Text] II--Himachal's Plans for Forestry

BY far the most important step the Himachal government has taken is to drive out the contractors and take over all commercial felling in the state. It is doing this in stages. Contract felling was banned in nine out of the 27 forest divisions in 1980-81, and will be eliminated from the remaining divisions by 1983. Since contractors will now have no access to the forests any private felling will automatically be illegal and will be a good deal more difficult to conceal.

On October 2 this year, the government followed up this ban with a comprehensive ordinance that also banned the felling of privately owned trees by the contractors after October 31, 1982. It also fully nationalised the tapping of resin. Henceforth those with private felling rights will have to ask the Himachal Forestry Corporation to do the job. In exchange, the government has promised to give them 40 per cent of the selling price of the timber. This means that the owners will now earn Rs. 800 to Rs. 1.000 on the sale of a medium sized deodar tree that fetches Rs. 2.000-2.500 in Amritsar. Against this, the private contractors have so far been paying them Rs. 350 or less. What is more, the government has agreed to pay owners 10 per cent of the current market value as soon as they mark a tree for felling in the current felling cycle, and a further ten per cent a year up to the ceiling of 40 per cent. The owner is thus assured of an annual income from this tree, but still gets the difference between the market price at the time of making the contract with the government, and the market price at the time of felling. Privately tapped resin can also now be sold only to the government.

Flying squads

To enforce the ban, the state government has decided to shift the focus of its activities from the forests, where policing is difficult, to the roads. It is reinforcing the checkposts at all the 19 exit points from the state. In addition it has set up flying squads to move rapidly to any point of the state where illegal felling or transport of timber is reported. Since they were set up last year, the flying squads have made 256 arrests for illegal felling. While this is not a bad record, state officials are puzzled by the fact that the rate of arrests has tapered off. In September this year it had come down to nil. They do not know whether this means that illegal felling and transport are on the decline, or that the squads are being bought off.

(However, the main thrust of the government's programme is on an extensive replantation scheme. From two crores of trees a year, it plans to raise the annual replantation rate to seven crores of trees in 1984-85, and intends to maintain it at this level for the rest of the decade. In 1980-81, it achieved its target of three crore plantings and is well set to attain the target of four crores this year. But replanting is only half the battle. The more important half is to ensure that the trees survive.

As was mentioned earlier, the government itself believes that more than a quarter of the trees planted actually attain maturity. But the extremely rapid rate of deforestation makes even this figure suspect. At any rate, officials in Himachal are acutely conscious of the fact that an improvement in the survival rate to just ten per cent above the present level, whatever it may be, will mean the addition of *seven million more trees every year* to the growing stock in Himachal:

Studies of the survival rate in the advanced countries show that it is seldom much higher than 60 per cent. The government has set a more modest initial target of 50 per cent for the state. To achieve this it is trying to tackle all the causes of the present low survival rate at the same time.

Corruption rampant

The main cause is simple corruption. Funds for the replanting programme are disbursed on the basis of "so much per tree." If the forest officers plant fewer trees and send in a false report they can, and very often do, pocket the rest of the money. To reduce this malpractice if not eliminate it altogether, the government has decided that when handing over charge to his successor every forest officer must give a detailed tally of the total number of saplings planted and their location. His successor must verify this before taking over charge. If he does not, then he will be held guilty if there is a discrepancy when he in turn hands over charge to his successor.

In addition to better control procedures of this type, the government has also instituted prizes for forest divisions which achieve the highest survival rates. But the prizes being offered are pitifully small — ranging from Rs. 30,000 as the first to Rs. 10,000 as the third prize. But since these are given to an entire forest division, and have therefore to be shared by up to 100 persons, the individual prize money is very small.

This is an area in which private organisations and trusts can help. The Himachal government obviously feels inhibited about giving more handsome prizes for fear of setting a precedent that will provoke similar demands from its other employees. But private organisations and trusts do not have to worry about this. It will not strain the budget of large corporation, for instance, to offer even Rs. 10 lakhs worth of forestry prizes a year, particularly if a part of this can be written off legitimately against taxes on the grounds that it stimulates rural development. But the impact of prize money on this scale on the state forestry departments will be electrifying. This is therefore clearly an area in which a little money will go the longest way.

Apple revolution

Perhaps the most serious problem that the Himachal government faces in the short run is the growing demand for soft wood to make cases for transporting apples. In 1980, this was of the order of 200,000 cubic metres, but the government estimates that by 1990, the demand from the orchards that have already laid out will amount to 4,000,000 cubic metres and require the felling of 140,000 trees:

The demands of the industry do not only pose a threat to the environment: but also cause enormous economic waste. One consequence of the apple revolution has been a steady decline in the real price of apples over the last 20 years. Today, the viability of orchards situated in the interior or at some distance from a motorable road is precarious. Growers claim that if a case cannot be supplied for six or at most seven rupees, the cost of packaging will become prohibitive. As a result soft woods, that could be used to make high quality paper, are being used for making cases. The value added is thus literally a hundredth of what it can be.

The Himachal government has decided to substitute wood partly with specially shaped cardboard cartons, rather like those used for transporting eggs, and partly with cases made from resin bonded board, from wood wastes. A factory is being established at Parwanoo in the foothills which will also produce other timber products and subsidise the production of apple cases from their sale. The scheme appears sound on paper, but as the history of most attempts at cross-subsidation shows, such ventures often end up making very large losses.

In view of this risk, it is surprising that the Himachal government has not thought of making cases out of bamboo, particularly as it is planting stands all along the foothills in the areas prone to waterlogging. One reason may be that growers resist the use of bamboo. They point out that since bamboo baskets are flexible, the lower ones in a stack are likely to be squeezed. This will bruise the delicate skin of the apples inside. But this problem can surely be overcome by appropriate design changes. Bamboo cases will not only be exceedingly cheap, but will also provide work to literally thousands of persons.

Powerful lobbies

Only time will tell how successful the Himachal government's programme will be. But irrespective of this, it deserves unstinting praise on one ground: from the first days of independence, forest contractors have been one of the main sources of party funds. Over the years they have built enormously powerful lobbies within the party in power and have "fed" scores, possibly hundreds, of MLAs. The Himachal government's decision has involved breaking the ruling party's links with the contractors. Not surprisingly it provoked strong protests, so much so that the chief minister decided first to come down to Delhi and consult the party leaders before implementing his reforms. It is to his and their credit that the programme was endorsed and is now being implemented. Himachal has thus shown the way for Himalayan states to follow.

CSO: 5000/7012

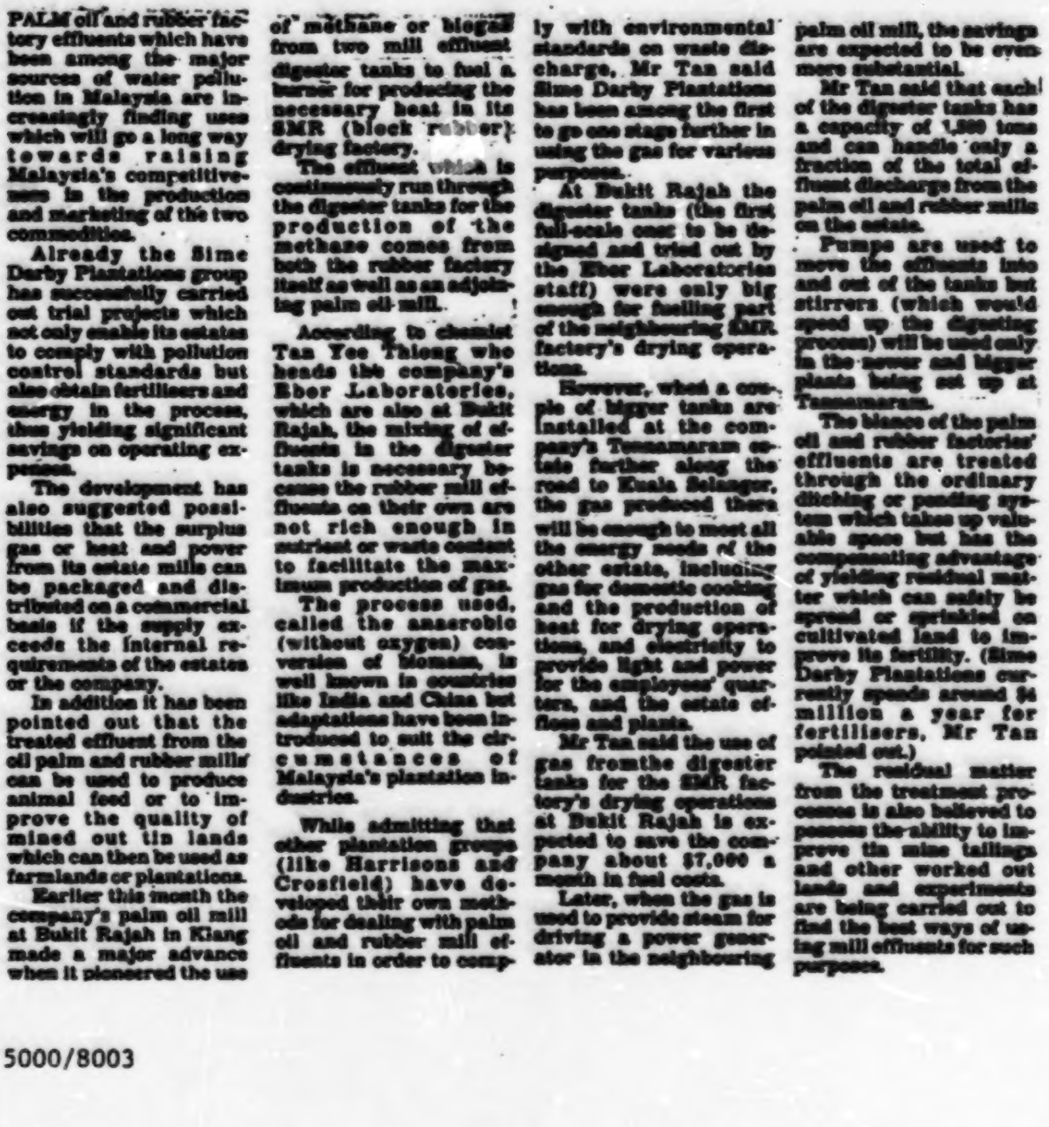
BRIEFS

HOOGHLY DESILTING PLAN--New Delhi, Oct. 12--The Dredging Corporation of India has prepared a Rs 5 crore scheme for the desilting of the Hooghly to make it suitable for deep navigation, reports PTI. The scheme, to be completed in five years, will provide for a draft of 10.5 metres for 365 days at Haldia port and a draft of nine metres for 300 days at Calcutta port. The corporation has undertaken a survey of the river. [Text] [Calcutta THE STATESMAN in English 13 Oct 81 p 3]

CSO: 5000/7009

PALM OIL, RUBBER FACTORY EFFLUENTS USED AS ENERGY SOURCE

Kuala Lumpur BUSINESS TIMES in English 30 Oct 81 p 18



[Text] PALM oil and rubber factory effluents which have been among the major sources of water pollution in Malaysia are increasingly finding uses which will go a long way towards raising Malaysia's competitiveness in the production and marketing of the two commodities.

Already the Sime Darby Plantations group has successfully carried out trial projects which not only enable its estates to comply with pollution control standards but also obtain fertilisers and energy in the process, thus yielding significant savings on operating expenses.

The development has also suggested possibilities that the surplus gas or heat and power from its estate mills can be packaged and distributed on a commercial basis if the supply exceeds the internal requirements of the estates or the company.

In addition it has been pointed out that the treated effluent from the oil palm and rubber mills can be used to produce animal feed or to improve the quality of mined out tin lands which can then be used as farmlands or plantations.

Earlier this month the company's palm oil mill at Bukit Rajah in Klang made a major advance when it pioneered the use of methane or biogas from two mill effluent digester tanks to fuel a burner for producing the necessary heat in its SMR (block rubber) drying factory.

The effluent which is continuously run through the digester tanks for the production of the methane comes from both the rubber factory itself as well as an adjoining palm oil mill.

According to chemist Tan Yee Thiong who heads the company's Ebor Laboratories, which are also at Bukit Rajah, the mixing of effluents in the digester tanks is necessary because the rubber mill effluents on their own are not rich enough in nutrient or waste content to facilitate the maximum production of gas.

The process used, called the anaerobic (without oxygen) conversion of biomass, is well known in countries like India and China but adaptations have been introduced to suit the circumstances of Malaysia's plantation industries.

While admitting that other plantation groups (like Harrisons and Crosfield) have developed their own methods for dealing with palm oil and rubber mill effluents in order to comply with environmental standards on waste discharge, Mr Tan said Sime Darby Plantations has been among the first to go one stage further in using the gas for various purposes.

At Bukit Rajah the digester tanks (the first full-scale ones to be designed and tried out by the Ebor Laboratories staff) were only big enough for fuelling part of the neighbouring SMR factory's drying operations.

However, when a couple of bigger tanks are installed at the company's Tennamaram estate further along the road to Kuala Selangor, the gas produced there will be enough to meet all the energy needs of the other estate, including gas for domestic cooking and the production of heat for drying operations, and electricity to provide light and power for the employees' quarters, and the estate offices and plants.

Mr Tan said the use of gas fromthe digester tanks for the SMR factory's drying operations at Bukit Rajah is expected to save the company about $7,000 a month in fuel costs.

Later, when the gas is used to provide steam for driving a power generator in the neighbouring palm oil mill, the savings are expected to be even more substantial.

Mr Tan said that each of the digester tanks has a capacity of 1,500 tons and can handle only a fraction of the total effluent discharge from the palm oil and rubber mills on the estate.

Pumps are used to move the effluents into and out of the tanks but stirrers (which would speed up the digesting process) will be used only in the newer and bigger plants being set up at Tennamaram.

The blance of the palm oil and rubber factories' effluents are treated through the ordinary ditching or ponding system which takes up valuable space but has the compensating advantage of yielding residual matter which can safely be spread or sprinkled on cultivated land to improve its fertility. (Sime Darby Plantations currently spends around $4 million a year for fertilisers, Mr Tan pointed out.)

The residual matter from the treatment processes is also believed to possess the ability to improve tin mine tailings and other worked out lands and experiments are being carried out to find the best ways of using mill effluents for such purposes.

CSO: 5000/8003

OPPOSITION OPPOSES NATIONAL AMENDMENT BILL

Wellington THE EVENING POST in English 9 Oct 81 p 6

[Article by Rae Lamb: "Major Changes To 'Fast Track' Bill"]

[Text] The controversial National Development Amendment Bill has been substantially altered by a parliamentary select committee.

But when the bill was reported back to the house yesterday the Opposition still bitterly opposed it. Labour MPs pledged that on becoming government they would repeal the bill and the original act.

A number of the changes to the bill simply altered the wording and clarified certain provisions.

The most substantial changes involved the deletion of a clause giving the Planning Tribunal certain rights relating to applications under the act, a substantial modification to the provision relating to the awarding of costs by the tribunal, and the dropping of a clause allowing the governor-general to validate slight irregularities in the planning procedure required by the act.

The clause relating to the role of the Minister of Works and Development and the commissioner for the environment at a tribunal hearing was clarified as was the clause relating to the tribunal's report on consents.

The chairman of the lands and agriculture select committee, Mr Leo Schultz, told Parliament that the general tenor of the 77 submissions received by the committee was adverse to the bill. He believed the effect of the bill was not understood and that it would be different from that envisaged by the critics of the bill.

The bill, he said, was designed to remedy a small loophole in the original act.

Labour's Christchurch Central MP, Mr Geoffrey Palmer, said it was a bad bill aimed at facilitating the Government's "think big" strategy, and in particular the Aramoana smelter.

The bill had been put on a legislative fast-track and only half of those witnesses who had wanted to be heard by the select committee had been heard. He questioned the need for this rush, saying that Aramoana was shrouded by doubt and might not proceed at all.

Mr Palmer said that although some of the more obnoxious provisions in the bill had been dropped or changed, the Government had been deaf to pleas for amendment to clause 3. A clause that he believed would clip the wings of the commissioner of the environment.

The Parliamentary Under-Secretary to the Minister of Energy, Mr Brill, accused the Labour Party of blind prejudice against growth and development.

He said it was wrong to say the commissioner for the environment's powers were being trimmed, and Labour was responsible for public uncertainty about this.

Mr Brill said the obligations of the commissioner under the new bill were minimum requirements. The commissioner could do a lot more than was asked if he felt it was necessary.

The Minister of Energy, Mr Birch, said 77 submissions from the whole of the country did not indicate great opposition to the bill.

He said the bill defined the role of the commissioner so he would focus on the adequacy and accuracy of environmental impact reports.

Labour's Waitakere MP, Mr Ralph Maxwell, said the Government's attempt to paint Labour in an anti-growth position was rubbishy propaganda.

The bill, he said, had been shredded and the Government was stuck in "no man's land" not knowing which way to go.

The Opposition lost the division on whether the report of the select committee should be accepted by the house.

CSO: 5000/9050

GOVERNMENT MOVES TO PROTECT RIVERS TERMED INADEQUATE

Wellington THE EVENING POST in English 21 Oct 81 p 27

[Text] Conservation groups have strongly criticised government moves to protect wild and scenic rivers as inadequate.

The Acclimatisation Societies, Environment and Conservation Organisations (Eco) and the Federated Mountain Clubs all attacked the Government's proposed Water and Soil Conservation Amendment Bill as failing to provide the permanent protection for rivers that the Government had promised.

But in a joint submission to the specially formed parliamentary select committee studying the measure, Federated Farmers and the New Zealand Freezing Companies' Association criticised it for failing to spell out protection for those using water for farming and industry.

The bill's opponents all called for separate legislation to protect rivers, like the American Wild and Scenic Rivers Act in the United States.

Objections

Summarising the objections, the national executive of New Zealand Acclimatisation Societies told the committee the bill "at best" only gave those interested in preserving the rivers "a chance to compete" with those seeking to physically change rivers for productive purposes.

Rather than accepting that rivers should be left untouched unless need to change them could be proven, the legislation supported the concept that they were there to be used for productive purposes and should only be protected if a strong enough case could be made for this.

"This is the exact fundamental weakness in the philosophical approach of this bill to natural water," the Acclimatisation Societies said. The bill forced its conservations to "justify the existence and continuance of a natural resource that is just that — natural."

"The presumption should be in favour of the status quo, unless there should be some strong reason otherwise."

It was "fundamentally wrong," the societies said, that groups should have to go through elaborate and expensive procedures "simply to maintain that which is already there."

Eco said the bill was "inadequate to provide permanent river protection for outstanding rivers."

Special

Rivers in their natural state were the last "major unprotected component of the New Zealand landscape" and adequate protection demanded a special act with a schedule of outstanding rivers to be given permanent protection from hydro-damming.

Half the country's estimated hydro-power potential had already been utilised and "all the easy rivers have now been damned," Eco said.

"Further exploitation will be increasingly expensive and dangerous and will increasingly compromise outstanding rivers."

Clubs

The Acclimatisation Societies and Eco were both echoed by the mountain clubs who said the bill was "completely inadequate to provide permanent protection from damming for outstanding wild and scenic rivers."

But Federated Farmers, while not opposed to certain areas of natural water being set aside under a conservation order system, was concerned that insufficient concern was being given to irrigation needs.

The bill should not be rushed through Parliament before it rises at the end of this week but should be considered at more leisure during the summer recess, Federated Farmers said.

The freezing companies also accepted it was "appropriate New Zealand have legislation permitting areas of natural water to be set aside because of the special character of the area."

But they said they were concerned that the bill as proposed would have adverse effects on existing and potential industry.

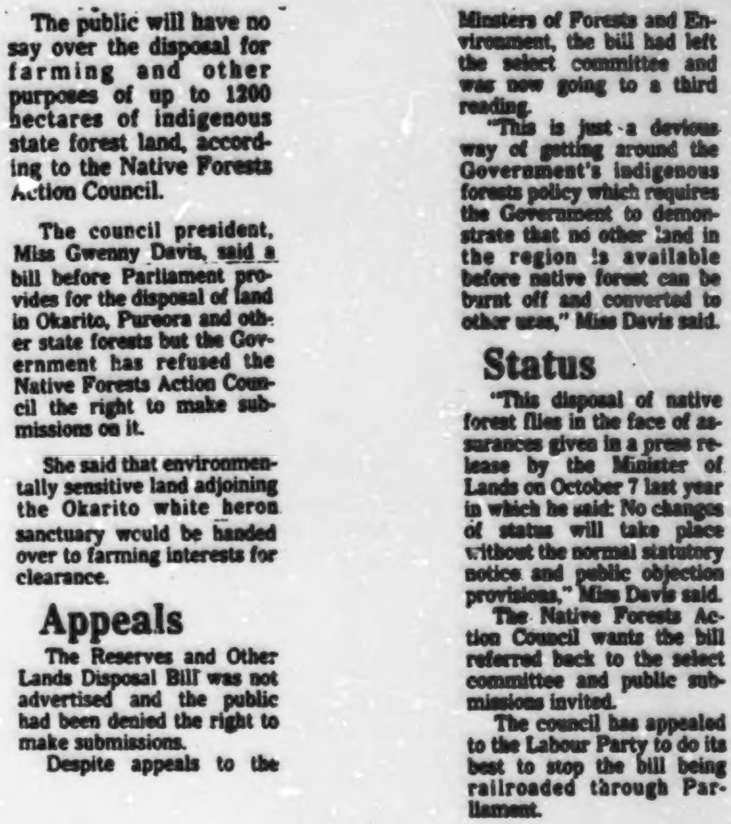
The bill did not specifically limit what water might be preserved and left "users of water for farming and industrial purposes . . . in a state of uncertainty."

CSO: 5000/9050

FOREST PROTECTION GROUP ATTACKS LAND DISPOSAL BILL

Wellington THE EVENING POST in English 6 Oct 81 p 13

[Text]



The public will have no say over the disposal for farming and other purposes of up to 1200 hectares of indigenous state forest land, according to the Native Forests Action Council.

The council president, Miss Gwenny Davis, said a bill before Parliament provides for the disposal of land in Okarito, Pureora and other state forests but the Government has refused the Native Forests Action Council the right to make submissions on it.

She said that environmentally sensitive land adjoining the Okarito white heron sanctuary would be handed over to farming interests for clearance.

Appeals

The Reserves and Other Lands Disposal Bill was not advertised and the public had been denied the right to make submissions.

Despite appeals to the Ministers of Forests and Environment, the bill had left the select committee and was now going to a third reading.

"This is just a devious way of getting around the Government's indigenous forests policy which requires the Government to demonstrate that no other land in the region is available before native forest can be burnt off and converted to other uses," Miss Davis said.

Status

"This disposal of native forest flies in the face of assurances given in a press release by the Minister of Lands on October 7 last year in which he said: No changes of status will take place without the normal statutory notice and public objection provisions," Miss Davis said.

The Native Forests Action Council wants the bill referred back to the select committee and public submissions invited.

The council has appealed to the Labour Party to do its best to stop the bill being railroaded through Parliament.

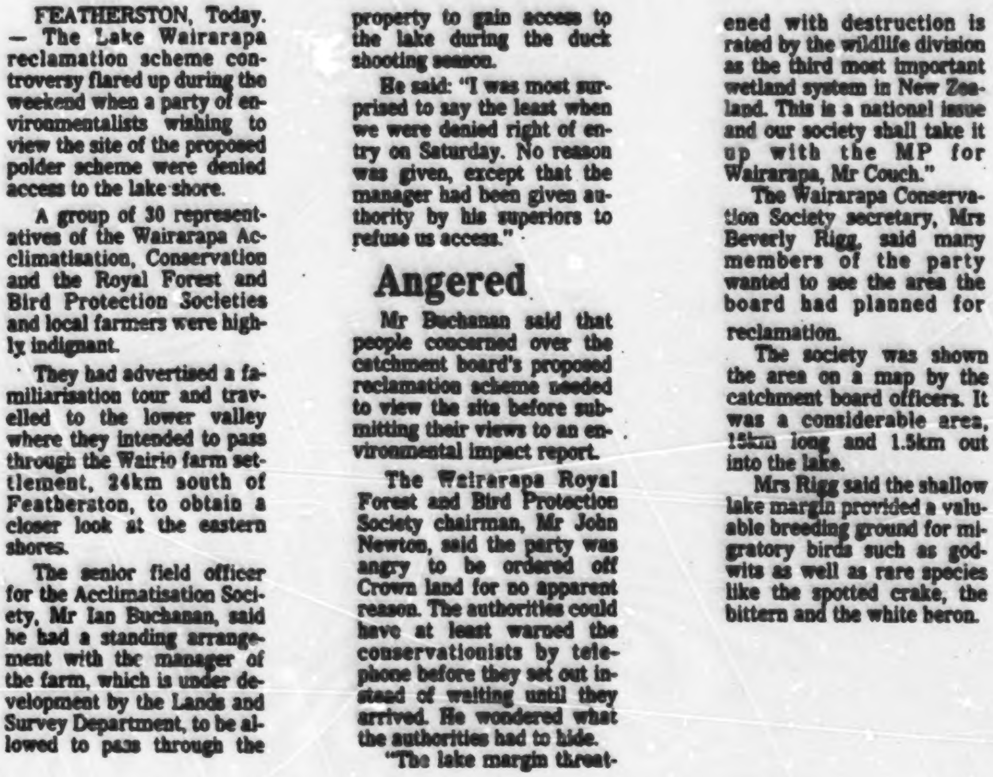
CSO: 5000/9050

ENVIRONMENTALISTS DENIED ACCESS TO POLDER SCHEME SITE

Wellington THE EVENING POST in English 12 Oct 81 p 5

[Article by Janet Drummond]

[Text]



FEATHERSTON, Today. — The Lake Wairarapa reclamation scheme controversy flared up during the weekend when a party of environmentalists wishing to view the site of the proposed polder scheme were denied access to the lake shore.

A group of 30 representatives of the Wairarapa Acclimatisation, Conservation and the Royal Forest and Bird Protection Societies and local farmers were highly indignant.

They had advertised a familiarisation tour and travelled to the lower valley where they intended to pass through the Wairio farm settlement, 24km south of Featherston, to obtain a closer look at the eastern shores.

The senior field officer for the Acclimatisation Society, Mr Ian Buchanan, said he had a standing arrangement with the manager of the farm, which is under development by the Lands and Survey Department, to be allowed to pass through the property to gain access to the lake during the duck shooting season.

He said: "I was most surprised to say the least when we were denied right of entry on Saturday. No reason was given, except that the manager had been given authority by his superiors to refuse us access."

Angered

Mr Buchanan said that people concerned over the catchment board's proposed reclamation scheme needed to view the site before submitting their views to an environmental impact report.

The Wairarapa Royal Forest and Bird Protection Society chairman, Mr John Newton, said the party was angry to be ordered off Crown land for no apparent reason. The authorities could have at least warned the conservationists by telephone before they set out instead of waiting until they arrived. He wondered what the authorities had to hide.

"The lake margin threatened with destruction is rated by the wildlife division as the third most important wetland system in New Zealand. This is a national issue and our society shall take it up with the MP for Wairarapa, Mr Couch."

The Wairarapa Conservation Society secretary, Mrs Beverly Rigg, said many members of the party wanted to see the area the board had planned for reclamation.

The society was shown the area on a map by the catchment board officers. It was a considerable area, 15km long and 1.5km out into the lake.

Mrs Rigg said the shallow lake margin provided a valuable breeding ground for migratory birds such as godwits as well as rare species like the spotted crake, the bittern and the white heron.

CSO: 5000/9050

MINING INDUSTRY, ENVIRONMENTALISTS CLASH OVER MINING ACT

Industry Leader's Warning

Wellington THE EVENING POST in English 10 Oct 81 p 1

[Text]

MAJOR INTERNATIONAL mining companies will probably pull out of New Zealand if a bill before Parliament becomes law, a local exploration company head claimed today.

In a letter to the editor of the "Post", Mr Keith Walshe, managing director of Bronze Boulder Mining and Development Co Ltd, also blasted "misdirected and uninformed conservation attitudes".

He said these attitudes had played a significant part in the amendments to the Mining Act now before Parliament.

The amendments will get asecond reading this week and it is expected that they will go through all stages before the house rises in a fortnight.

Bronze Boulder is a wholly New Zealand-owned company. It will shortly operate four gold-dredging machines on the Clutha River and is currently involved in a joint-venture exploration in the Ida Valley with Gold Mines of New Zealand, a company almost wholly owned by South Africa's Anglo American Corporation.

Mr Walshe said the mining industry in this country was in deep trouble because of the bill, and, if passed into law, future exploration activities could be stopped.

He said the upsurge in the hunt for mineral resources in the Western world had been heralded in New Zealand by the arrival of exploration teams with some of the largest mining companies in the world.

High-risk cash

"These companies bring high-risk capital that is not available here, and the expertise which New Zealand does not have to develop the more complex mineral assemblages."

The mining bill could double the time it took to obtain licences, and set other constraints.

"The present mood of explorers is to take their expertise and money elsewhere.

"This is a serious situation for New Zelaand when it appears that nature has provided the answer to New Zealand's problems and man blunts the country's opportunities for its own development."

Proportions

Mr Walshe said the potential land area involved in mining would be a fraction of one percent, while environmentalists "control" a substantial proportion of the land.

"It is also unfair and unrealistic that (environmentalists) should expect other countries to mine their minerals so that we may buy them and not explore for and develop our own. They could not live in houses, ride bicycles, own cars, watch TV or even nail together an objection or protest placard without someone somewhere mining minerals to allow them to do so."

Mr Walshe said the greatest environmental problem in New Zealand was soil erosion, but environmentalists were not out planting trees on erosion-prone areas.

"The choice of protest matters and priorities by many of the so-called environmentalists, in relation to the true environmental problems facing the nation, is a matter for conjecture and warrants some deeper thinking by the public."

Much at stake

Mr Walshe said a lot was at stake: Southland lignite could yield up to 4000 million tonnes while the West Coast of the South Island has large reserves of ilmenite, an ore of titanium. But investigations by companies of tungsten, molybdenum, vanadium, plantinum, cobalt, lithium and phosphate resources were being delayed by hold-ups in the granting of prospecting licences.

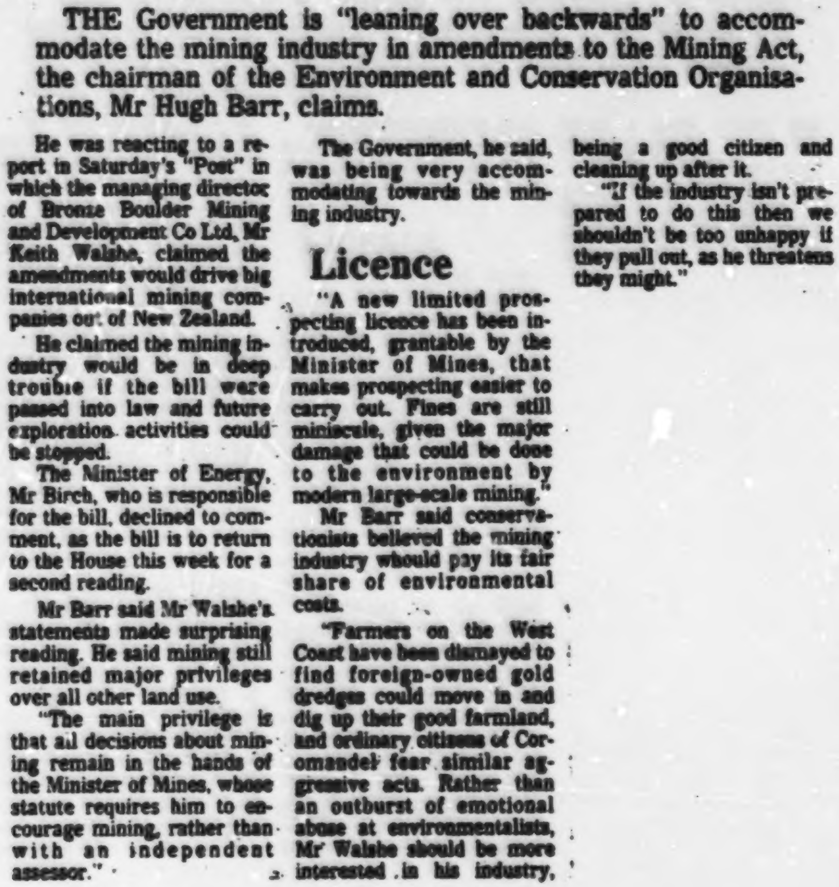
Mr Walshe also complained of the increased penalties the new bill sets.

"Breaching the Mining Act (will carry) a penalty of up to $50,000 whilst assaulting a policeman may only cost $140. How ludicrous the situation."

Environmentalist's Reply

Wellington THE EVENING POST in English 14 Oct 81 p 26

[Text]



THE Government is "leaning over backwards" to accommodate the mining industry in amendments to the Mining Act, the chairman of the Environment and Conservation Organisations, Mr Hugh Barr, claims.

He was reacting to a report in Saturday's "Post" in which the managing director of Bronze Boulder Mining and Development Co Ltd, Mr Keith Walshe, claimed the amendments would drive big international mining companies out of New Zealand.

He claimed the mining industry would be in deep trouble if the bill were passed into law and future exploration activities could be stopped.

The Minister of Energy, Mr Birch, who is responsible for the bill, declined to comment, as the bill is to return to the House this week for a second reading.

Mr Barr said Mr Walshe's statements made surprising reading. He said mining still retained major privileges over all other land use.

"The main privilege is that all decisions about mining remain in the hands of the Minister of Mines, whose statute requires him to encourage mining, rather than with an independent assessor."

The Government, he said, was being very accommodating towards the mining industry.

Licence

"A new limited prospecting licence has been introduced, grantable by the Minister of Mines, that makes prospecting easier to carry out. Fines are still miniscule, given the major damage that could be done to the environment by modern large-scale mining."

Mr Barr said conservationists believed the mining industry whould pay its fair share of environmental costs.

"Farmers on the West Coast have been dismayed to find foreign-owned gold dredges could move in and dig up their good farmland, and ordinary citizens of Coromandel fear similar aggressive acts. Rather than an outburst of emotional abuse at environmentalists, Mr Walshe should be more interested in his industry, being a good citizen and cleaning up after it.

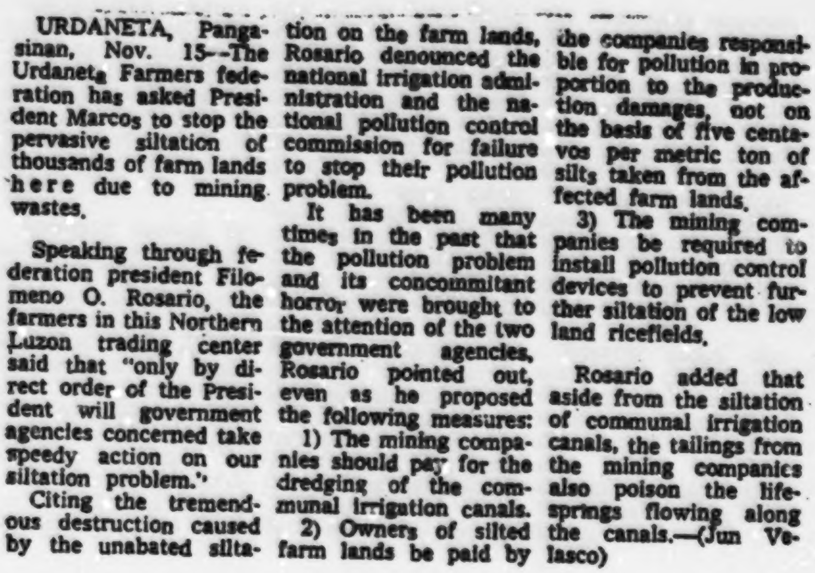
"If the industry isn't prepared to do this then we shouldn't be too unhappy if they pull out, as he threatens they might."

CSO: 5000/9050

MININC WASTE BLAMED FOR POLLUTION

Manila BULLETIN TODAY in English 17 Nov 81 p 14

[Text]



URDANETA, Pangasinan, Nov. 15--The Urdaneta Farmers federation has asked President Marcos to stop the pervasive siltation of thousands of farm lands here due to mining wastes.

Speaking through federation president Filomeno O. Rosario, the farmers in this Northern Luzon trading center said that "only by direct order of the President will government agencies concerned take speedy action on our siltation problem."

Citing the tremendous destruction caused by the unabated siltation on the farm lands, Rosario denounced the national irrigation administration and the national pollution control commission for failure to stop their pollution problem.

It has been many times in the past that the pollution problem and its concommitant horror were brought to the attention of the two government agencies, Rosario pointed out, even as he proposed the following measures:

1) The mining companies should pay for the dredging of the communal irrigation canals.

2) Owners of silted farm lands be paid by the companies responsible for pollution in proportion to the production damages, not on the basis of five centavos per metric ton of silts taken from the affected farm lands.

3) The mining companies be required to install pollution control devices to prevent further siltation of the low land ricefields.

Rosario added that aside from the siltation of communal irrigation canals, the tailings from the mining companies also poison the lifesprings flowing along the canals.—(Jun Velasco)

CSO: 5000/4906

THAILAND

BANNED PESTICIDES STILL WIDELY USED

Islamabad THE MUSLIM in English 8 Nov 81 p 5

[Article by Suchin Preecha]

[Text] THE UNITED STATES rejected a large shipment of Thai soybeans a few months ago. Other crops like rice, maize, sugarcane, beans and fruits are also in danger of being banned by foreign importers.

The reason: these crops contained residues of Dieldrin and DDT, harmful chemicals which have been banned in the U.S.

Yet, Thai farmers and other farmers in the Third World continue to use those banned chemicals. Intensive propaganda about the beneficial effects of pesticides has transformed Thai farmers from skeptns to virtual zealots of inorganic chemicals.

But with increasing costs, rodents and new crop diseases— not to mention the harmful effects of these chemicals on man— it is highly debatable whether pesticides actually increase agricultural production.

A government scientist is trying to combat this and in the process, he almost lost his job three times. The outspoken views of Dr Prayoon Deemar of the office of toxic substances research have ostracised him from his colleagues at the Ministry of Agriculture.

He has accused the United States manufacturers of dumping toxic chemicals— such as insecticides and pesticides— on developing countries at a rate that has virtually turned the peoples of these nations into 'guinea pigs'.

Dr. Prayoon, who spoke during a seminar on the control of chemicals in importing countries in Yugoslavia last April, charged bitterly that some of these toxic substances have long since been banned in the United States itself.

"But their foreign sales are being pursued relentlessly in utter disregard for the well-being of the people in the importing countries," he said.

Dr. Prayoon said that while the awareness of the hazards of toxic chemicals is growing among developing countries, the countries find themselves helpless in the face of powerful lobbies mounted by the foreign manufacturers.

"Manufacturers of toxic chemicals for agricultural and pharmaceutical purposes are so powerful that they can virtually control governments of developing nations,.. he said.

Dr. Prayoon said that as an example, Thailand has never banned a single toxic chemical despite its Toxic Substance Control Act. Such deadly and banned chemicals as Tricholoxophenoxy Acetic Acid and Paraquat or Gramaxone are still widely used in Thailand and other Third World countries.

Dr. Prayoon said that more than ten sugarcane plantation workers have already died from too much residue of Paraquat. A person who ingests more than 0.1 parts per million (PPM) of this dangerous chemical would die within six hours if no proper and immediate treatment is administered to him.

To add to the misery of the Thai victims, treatment can only be done at Bangkok's Chulalongkorn Hospital.

"Considering the time constraint and the distance between the southern provinces and the hospital, a sugarcane plantation workers with more than 0.1 PPM in his blood would certainly die before he receives proper treatment

– if he ever gets one at all," Dr. Prayoon said.

In the rubber plantations of Thailand, the chemical Trichorophenoxy Acetic Acid– or better known by its formula, 2,4,5-T – is still widely used as a weed killer. Thix toxic substance is composed of a chemical called Dioxin.

During the Vietnam War, this chemical was mixed with another known as 2, 4-D to produce a defoliant called 'Agent Orange'.

But before the chemical was used as a war wepon by the USA in its scorch-and-search campaign in Vietnam, 'Agent Orange' was tested in Karnchanaburi Province, only 150 kilometres west of Bangkok.

After the Vietnam War, many American soldiers involved in the spraying campaign were found to have died of cancer. The U.S. War Veterans Organization filed a damage suit against the manufacturer of the deadly chemical.

For its part, the U.S. Environmental Protection Agency ordered the manufacturer in 1971 to reduce the Dioxin content of 2, 4, 5-T to 0.1 PPM. The chemical was finally banned in 1979 when tested showed that even with minute amounts, children born in Arkansas farms where 2,4,5-T was used had cleft palates.

"At present, 2,4,5–T is banned in such developed countries as the U.S., Britain, Sweden, the Netherlands and Italy but the manufacturers continue to dump these deadly chemicals on developing countries," Dr. Prayoon said.

The Thai scientists fight against dumping of toxic chemicals on Thailand is a hard struggle. Because of his crusade, his office was excluded from the 1982 Thai budget, which meant that the office for toxic substance research had been automatically dissolved.

But Thai consumers, who are the most exposed to the hazards of such toxic chemicals, can continue where Dr. Prayoon has been cut off. United and with firm resolve, consumers themselves can galvanise action on many fronts.

The public's right to know what harmful substances go into the production of the foods they buy should be underscored at every turn. The right to reject such contaminated products is another ace, not to mention their right to a clean and healthy environment.

The exercise of these rights by consumers as proved in many countries, will go a long way in convincing the bureaucracy to heed Dr Prayoon's warning.–*Muslim Depthnews Service.*

CSO: 5000/4505

CEMA ENVIRONMENTAL PROTECTION PROGRAM OUTLINED

Warsaw GAZ, WODA I TECHNIKA SANITARNA in Polish No 4, Apr 81 p 93

[Article by Dr Leszek Sobczak]

[Text] Scope of Cooperation

The undertaking by the socialist countries joint efforts for the development of science in the area of protection and development of the environment is as apparent today as it was in 1979 when the decision was made to start an international research program of the CEMA countries, certain of their problems being held in common.* To these belong, first of all, the problems of air pollution control. For it is the air which is the source of most industrial pressures, and air polluted in one country can deposit its ruinous load in another. Though on a smaller scale, a similar example is furnished by rivers on national boundaries, rivers which flow through several countries and the waters of the Baltic. Cooperation of CEMA countries is currently at the stage of finalization and summation of the results of research conducted under the current 5-year plan as well as the work on the program for the years 1981-1985. The area of this cooperation embraces 18 subjects, ranging from theoretical questions of biocenology through protection of landscapes, chemica pollution and the genetic effects of environmental pollution, to methods of protecting and restoring various kinds of natural resources. Thus, cooperation includes all the fundamental issues which are significant for the development of scientific notions and economic practice in the area of protection and development of the environment in the socialist countries.

Scientific Notions

In the territory of the CEMA countries, similar types of pressures are exerted, connected with the development of the same subsectors of industry, chemicalization and intensification of agriculture, urbanization and the like. Then too, ecosystems exposed to the exertion of anthropogenic pressures exhibit marked similarities in the territories embraced in the research. This is a consequence of the fact that the forms and the extent of the economic exploitation of the environment in these countries are similar. Such a situation indicates the possibility of the application of similar preventive measures and methods of protection, shaping and rebuilding of ecosystems subjected to analogous types of pressures. In the course of cooperation, the accompanying identification of the scientific capabilities active in the field of research in environmental protection in the various countries indicates that in the sphere of CEMA, there exists significant differentiation in the area of scientific specialization. Research centers named for the questions they study exhibit significant variation as to the equipment in their research laboratories, the methods applied and their approach to research. In the USSR, there are advanced methods for researching the changes occurring in several kinds of ecosystems subjected to different a thropogenic factors. Soviet colleagues are working out programs adapted to digital computers, simulating the course of natural processes. Such methods make possible the determination of the probable changes occurring in ecosystems in consequence of the development of certain subsectors of industry, agriculture and the like.

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*For details see: L. Sobozak "Wspolpraca panstw RWPG w dziedzinie ochrony srodowiska naturalnego" [Cooperation Among CEMA Nations in the Field of Protection of the Natural Environment] Koszalin Studies and Materials 1978, No 2, pp 196-200.

In the GDR, there is a developed program of research based on mathematical theory and cybernetics aimed at the investigation of the structures and processes emerging in ecosystems under the influence of human activity. In Czechoslovakia, there are very advanced studies in the ecology of landscape. In Poland, on the other hand, there are developed centers concerned with the general idea of ecological structures, especially biological structures which determine the resistance and the flexibility of ecosystems subjected to the influence of industrial pressures. An analogous differentiation of scientific capabilities in the several countries is to be a premise for the international division of labor.

Division of Labor

None of the CEMA members countries have total mastery alone of the scientific field of environmental protection, for none have a sufficient quantity or quality of scientific cadres or information services for this purpose. Research in the field of environmental protection embraces many thousands of scientific papers which appear every year.

The next valuable element of CEMA scientific cooperation is the communication of experiences among the countries. It embraces not only the results of published works but, above all, information about unpublished work and current laboratory research. This makes it possible to obtain the results of unsuccessful experiments, constituting perhaps a somewhat unpleasant, but, nonetheless, inevitable element on the research road of the new and unknown. The results of such studies do not, as a rule, constitute a subject for publication, but, on the other hand, information about them is extraordinarily valuable for those researchers who are working in a related subject area, facilitating the elimination of errors, the verification of their own assumptions as well as their research concepts and the selection of correct methods for the solution of the problems defined. Research techniques, especially such advanced ones, lend themselves to rapidly recurring gathering of information relying on modern, automatic instruments.

This is the next area of cooperation. And in this field a significant differentiation among the several partners occurs. This is a field of intensive cooperation, embracing the transmission of methodological experiments and the training of cadres. Summer schools are organized each year in particular countries. These are most often devoted to methodological subjects combined with practical knowledge of the use of research techniques. Such activity is currently being expanded by means of the creation of a system of scientific training periods, as well as by making it possible to complete doctoral studies in various centers abroad.

New Forms

Recently new forms of cooperation have emerged. Among them are joint, international research projects based on the international division of labor. For example, with regard to research on the seasonal migration of economically important varieties of birds, the jointly gathered extensive materials are next divided in parts among the several centers for the drawing up of a single, collective monograph. In other instances, the basis for the division of labor is the methodological or thematic specialization. A similar division of work assignment is emerging in research on the optimatlization of game management.

Scientific symposia and other forms of comparing the results obtained in the various centers are an important sector of cooperation. Without a doubt, they constitute a stimulating factor both in the area of themes and methodology and in the rate of implementation of research assignments. The awareness of scientific progress in other centers and the sense of urgency resulting from deadlines for the comparison of results obtained in 1979 have a mobilizing effect on the development of scientific research among all the partners.

The scientific cooperation implemented within the CEMA framework is exceptionally effective. It is likewise continuous and consistent. These international contacts have, beyond direct scientific cooperation, still another merit: the deepening of the sense of comradeship, respect and trust, factors which are as important in science and politics as they are in life.

LITERATURE

1. Text of the agreement for international cooperation of the CEMA countries in the sphere of the protection and development of the natural environment of man, dated 1975.

2. A report of the implementation of the international agreement concerning the cooperation of CEMA countries in the area of the protection and development of the natural environment of man, dated 1978/1979.

3. A plan for the international cooperation of CEMA countries in the area of the protection and development of the natural environment of man for the years 1981-1985.

8536
CSO: 5000/3003

HYDROELECTRIC PROJECTS POSING GRAVE ENVIRONMENTAL RISKS

Buenos Aires LA PRENSA in Spanish 20 Oct 81 p 16

[Article by Isaac Francisco Rojas]

[Text] Virgilio Roig, United Nationas consultant for environmental preoblems who has also been minister of economy of Mendoza, recently spoke at length about the "serious dangers (ecological) the Yacyreta dam will entail." He made a number of significant comments including the following: "In agreement with the former vice president of the nation, Ret Adm Isaac Rojas, I would categorize the Argentine-Paraguayan hydroenergy undertaking as a 'biological bomb.'"

Mr Roig's statements are of great importance and Gen Lino Montiel Forzano, Argentine president of the Binational Yacyreta Enterprise, addressed himself to them in the 19 September issue of LA PRENSA and invited Mr Roig's further views on the subject.

Mr Roig's statement is in error since neither I nor the enterprise I head consider Yacyreta Apipe a "biological bomb." In statement No 14 issued in July 1980 by our organization (Commission for the Defense of Argentine Interests in the Plata Basin) it says verbatim in paragraph No 5: "And furthermore, the construction of Corpus in Ita-Cua violates the agreement itself since when it is operating at peak there will be 60 cm variation in the level of the lake, and every day the water will cover and uncover large tracts which in this situation will become a swamp, a perfect "habitat" for the snail which is a vector of Schistosomiasis mansoni (blood fluke). In this thoughtless manner a 'biological bomb' will be built in a populated area which is now free of that endemic disease which plagues Brazil." This statement was sent to all the high national authorities and to many officials, among them the governors of the provinces of the Northeast and the Argentine ambassador in Brazil who at present is acting minister of foreign relations, an office which has had so great an influence in the signing of the faltering and defeatist 1979 trinational treaty of Puerto Stroessner.

The Case of Corpus

Thus we were not referring to Yacyreta-Apipe but to Corpus, in the event this dam were to be constructed in Ita-Cua and not at the level of the island Pindo-I (opposite Corpus) as our engineers and technicians had planned and as the most elementary geopolitical prudence would dictate. This appears not to have been taken into account by our defensive policy in the face of the new "transveral "determinism" which Brazil is developing. Even less consideration was given to a policy of expansion designed to make the presence of Argentina, which is now almost nonexistent, felt in the Southern Cone of the continent.

However, it was not only on that occasion that we referred to the danger of endemic Brazilian contamination of our waters in the projected Corpus dam (if it were to be erected in Ita-Cua). In our book entitled "Argentine Interests in the Plata Basin" (2nd edition 1972) we devoted a substantial part of a chapter, No 12, quoting a work called "Conflicting Solutions in the Upper Parana" which was published in 1972 in LA CAPITAL of Rosario, LA NUEVA PROVINCIA of Bahia Blanca, the BULLETIN OF THE NAVAL CENTER (October-November 1972), EL TERRITORIO of Posadas and other newspapers of the interior. We have also dealt with the subject in other books and writings, taking into account the authorized reports and studies of Argentine scientists such as Doctors W. Avalos and Humberto R. Cabral, Jr. as well as those of their distinguished Brazilian colleagues who are diligently studying and researching this very serious problem which deeply affects a large number of their fellow countrymen, since the infected area is spreading toward the Paraguayan, the Uruguayan and the Argentine borders. The graphs published in the 1971 studies--reproduced in my above mentioned work--pointed out that this area encompassed two-thirds of the Brazilian territory, including a large part of the Amazon Basion and practically all the Plata Basin from the states of Minas Gerais, San Pablo, Parana and the north of Santa Catalina all the way to the Atlantic coast.

After 10 Years

Ten years have gone by. To what new areas has the infection spread? Have the methods for combating it given the hoped-for results in Brazil? Has our government consulted with Argentine specialists who are scientifically and patriotically concerned about this serious and imminent threat which hangs over the health of a vast percentage of the Argentine population, that which lives in the nation's historic nucleus: Tucuman, (in its Quichua or precolonial sense), Mesopotamia, Santa Fe, El Chaco and Formosa? That is, the entire valley of the Argentine Plata, including a large part of Buenos Aires Province. Outside our political boarders, Bolivia and Uruguay will not be free from the risks of contamination.

For this reason, we do not reject the notion that the contamination of the Schistosomiasis mansoni which plagues Brazil, may seep into Yacyreta-Apipe as Mr Roig points out and, of course, in the dams that will be built on the Uruguay River under joint Argentine-Brazilian control from the Pepiri-Guazu in the north to the backwaters of the Salto Grande reservoir at the level of the Cuareim Rive on the Uruguayan-Brazilian border. In this way the province of Misiones would be the first Argentine area to be exposed to the danger of the endemic infection, caught between two fires: one coming from the Parana River and the other from the Uruguay. (See figure).

Hydraulics and Ecology

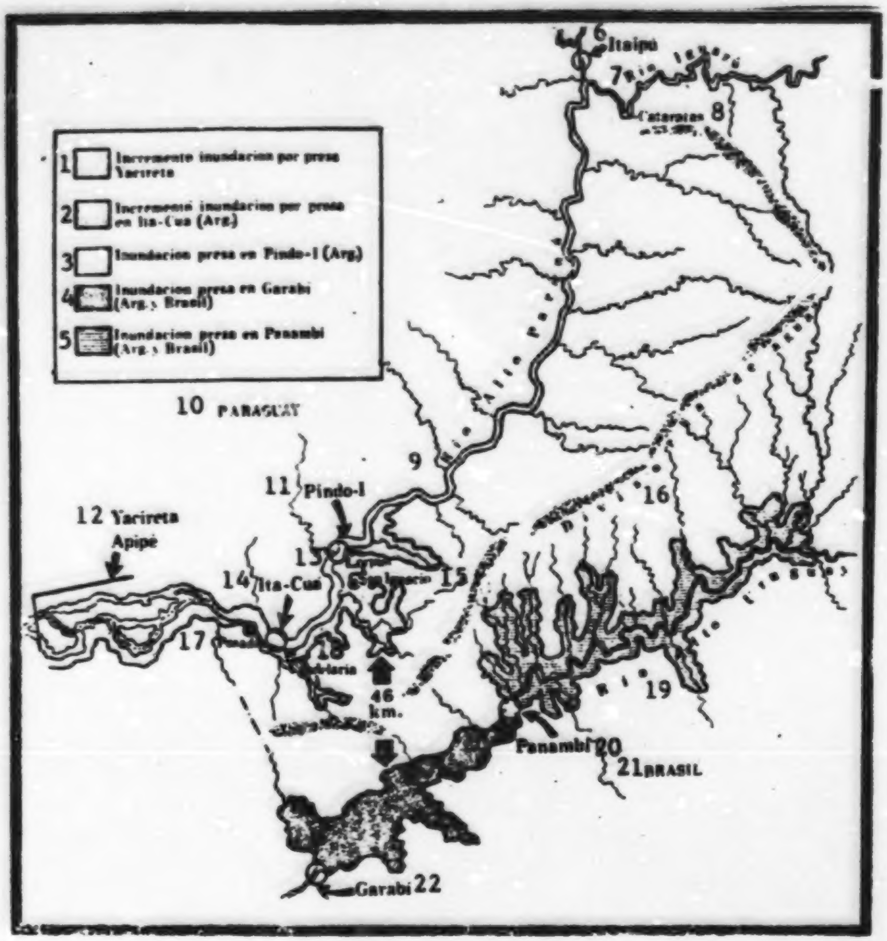
We are in agreement with the construction of the necessary hydraulic facilities but under strict conditions which take into account the ecology, on the one hand, and the geopolitics on the other. Since we feel that the latter was not taken into account by the Argentine representatives in the negotiations which led to the signing of various bi- and trilateral agreements (Argentina, Paraguay and Brazil), with obvious prejudice to the prestige and the interests of our country in the Plata Basin, we hope that the experience gained by the Argentine Foreign Office, now headed by an official who has actively participated, as ambassador to the Brazilian Government, in the negotiations and the signing of treaties which have been so unfavorable to us, we hope, I repeat, that the ecology will not be neglected. And, in reference to Schistosomiasis mansoni (from now on S. mansoni) we hope that at least the "Report by a Committee of Scientists of the WHO (World Health Organization, Geneva, 1980) with the title: "Schistosomiasis: Epidemiology and How To Combat It," technical reports series No 643, will have been read. I only quote technical recommendation No 12, page 64: "The increased migration of infected persons from regions in which there are S. mansoni strains resistant to the known medication is a matter of concern. It is essential to continue the diagnosis and treatment of those persons who migrate." Paragraph No 9 of the General Recommendations, page 66 states:

"WHO should provide the maximum support possible to the national programs combating Schistosomiasis which have been recently established in areas which are classically endemic such as the Nile Valley, the Philippines and Brazil because these endemic areas have most of the people of the world who are seriously infected."

Disadvantages of Corpus in Ita-Cua

We repeat that the construction of the Corpus dam in Ita-Cua and not at the level of the island Pindo-I involves, among other serious disadvantages which we have insistently mentioned, that of making an enormous swamp of some 38,000 hectares, in the immediate vicinity of Yacyreta in contrast to a swamp of 9,000 hectares in Pindo-I which would be very much closed in and this would act as a sort of biological brake and would make it very much more controllable then Ita-Cua in respect to the dissemination of S. mansoni if this endemic disease could not be confined to Brazil. And even though it were confined to that area, isn't there an extreme "permeability" of the border, the danger of which is pointed out in the reports quoted? What are the security and defense measures that Argentina has agreed upon with Brazil to prevent an infection which is already on its way to our borders--if it hasn't already arrived? And since the contamination comes from Brazil alone and it is Brazil who should assume the broadest responsibility for combating the disease, not only within its borders but also in preventing the disease from spreading to its neighbors, assuming a substantial share of the expenses, what contractual provisions has our government insisted upon, as just and reasonable and required as a part of its duty to protect the health of the Argentine population? We assume that the well-known "pragmatic" tendencies which characterize the diplomatic style of the minister of foreign affairs and culture will now be brought to bear to prevent a probable emergency which should have been borne in mind earlier on the basis of immutable and well-known principles of international law."

Map I



1 Incremento inundacion por presa Yacireta
2 Incremento inundacion por presa en Ita-Cua (Arg.)
3 Inundacion presa en Pindo-I (Arg.)
4 Inundacion presa en Garabi (Arg. y Brasil)
5 Inundacion presa en Panambi (Arg. y Brasil)
6 Itaipu
7
8 Cataratas
9
10 PARAGUAY
11 Pindo-I
12 Yacireta Apipe
13
14 Ita-Cua
15 San Ignacio
16
17 Posadas
18 Candelaria
19
46 km.
Panambi 20
21 BRASIL
Garabi 22

Legend:

1. Increase in flood area due to Yacireta dam
2. Increase in flood area due to dam at Ita-Cua (Argentina)
3. Flood area of dam at Pindo-I (Argentina)
4. Flood area of dam at Garabi (Argentina and Brazil)
5. Flood area of dam at Panambi (Argentina and Brazil)
6. Itaipu
7. Iguazu River
8. Cataracts
9. Upper Parana River
10. Paraguay
11. Pindo-I
12. Yacireta Apipe
13. Corpus
14. Ita-Cua
15. San Ignacio
16. Watershed
17. Posadas
18. Candelaria
19. Upper Uruguay River
20. Panambi
21. Brazil
22. Garabi

9204
CSO: 5000/2016

BRIEFS

POLLUTION CONTROL MEASURES--A soot collector based on the dry and wet separator system was installed at the Manuel Martinez Prieto Sugar Mill in Havana City. The design is made up of two basic factors: the soot separator and the closed circuit that recovers the 500 gallons of water a minute in the environmental decontamination process. The soot separator has a grate and a curtain of water. When the gas is projected against the grate, the impurities pass into the pipe where they are poured off through treatment with water. In the water filtration and recirculation system, a pump moves the liquid containing the soot and through a filter with waste pulp panels and mesh. The elements are separated and the clean water recirculates. The advantages of this product of the Mechanical Design Enterprise of the Ministry of the Sugar Industry are that it can be installed in the natural draft systems of most sugar mills, resistance to the exit of gases through the chimney is minimal and no induced draft ventilaters are needed, making it ideal, compared with other systems, due to the low cost. [Text] [Havana JUVENTUD TECNICA in Spanish Jul 81 p 8] 11,464

CSO: 5000/2017

POLLUTED BEACHES IN CENTRAL LITTORAL CLOSED

Caracas EL NACIONAL in Spanish 29 Oct 81 p D-25

[Text] La Guaira, 28 Oct (Special)--The beaches of the central littoral will remain closed until December because public health and maritime authorities have found that the high level of pollution, which led to their closing, continues to exist.

Port Captain Eleazar Lopez Pinto stated that the level of pollution still present at the beaches is being combatted jointly by the Ministries of Health and Environment, by INOS [National Institute of Sanitation Works], INAM [expansion unknown], and the Port Authority while the municipal and maritime police have been placed on watch.

Last month it was found that the public beaches and the resort areas had deteriorated so alarmingly that the authorities were obliged to close most of those on the central littoral and to notify the private clubs that they must take preventive measures.

"The people," Captain Lopez Pinto said, "have responded to the request that they not use the beaches and although they still come, it is only to enjoy the sun. But in any event, there is a constant police watch."

He says that the cleanliness and maintenance of the beaches entail a sizeable investment. Work is being done with the available resources so that some of the beaches, and possibly the resort of Naiguata, may be opened in December.

He said that it is very difficult to say when the Macuto resort will be reopened to the public because the equipment for pumping sewage is very expensive and it is necessary to replace all of it.

Various private clubs have been forced to install equipment for the treatment of sewage and garbage since it has been discovered that in some places there is only equipment to grind garbage which has then been thrown into the sea.

He acknowledged that work is not being done on the waters along the Catia resort and so it will not be open on the date set for the reopening of some of the beaches.

"It is a rather expensive job and it takes time and money to put the whole central littoral into operation."

He acknowledged that the number of tourists who come to the beaches of the central littoral from the metropolitan area on weekends and holidays had decreased considerably.

He pointed out that "people must understand that what is being done is for the sake of their health and that they will have to wait out the period of 90 days which we allotted ourselves to improve the environmental conditions of the beaches."

This means that Caracans, who are the ones who use the beaches the most, will have to wait the 90 days before returning to them.

9204
CSO: 5000/2018

ARAB CONFERENCE ON HYDROLOGICAL RESOURCES REVIEWED

Rabat L'OPINION in French 3 Oct 81 pp 1, 3

[Article: "Organization of Major Regional Session on Hydrology and Development of Substitute Energies: Development of an Arab-French-English Glossary on Technical Terminology"]

[Text] The Second Arab Conference on Water Resources was held in Rabat from 21 to 24 September, with the participation of 15 Arab countries and several Arab and international organizations and centers.

At the end of this conference, M'hamed Douiri, the minister of equipment and national development, presented a recommendation for the creation of a commission which will meet periodically to follow the application of the recommendations of the Arab conferences and to maintain contacts between the Arab countries between sessions.

The conference adopted several recommendations, relating, among other things, to holding periodic conferences in the Arab countries, organizing a large regional Arab session on hydrology and water resources in coordination with the specialized Arab centers, encouraging the Arab countries to establish and expand vistas in the sciences associated with water resources, as well as awarding grants in the field of studies and research.

The conference also recommended the establishment of a French-Arab glossary on technical terminology in the field of water resources with the collaboration of the Office for Coordination of Arabization in the Arab World which is located in Rabat, just as it recommended calling on the Arab countries and the Arab Center to support the states without sufficient prospects in order to organize specialized administrations for the study and development of water resources.

Establishing an Inventory and Statement of the Plan

The conference also recommended encouraging scientific and technical research in fields associated with water, as well as supporting the existing national and regional centers, if necessary, with a view to offering the scientific and technical base necessary for the creation of an Arab technology consonant with reality and Arab needs. It further recommended appealing to the member countries to increase their efforts in prospecting and searching for subterranean water resources.

In another recommendation the conference called on the member countries to establish an inventory and statement of the plan for water resources and to give all possible attention to study and research in the following fields: the storage of subterranean water by industry, the improvement of sources and the development of maritime sources, remedying the deeply felt lack of terminology relating to water in order to define drinking water and brackish waters in a precise manner, creating and supporting offices of Arab engineers in order to develop studies and projects relating to hydrological works.

Studying the Causes of Erosion

The conference further recommended study of the causes of erosion in each basin and selection of the appropriate techniques for controlling this phenomenon while developing plans on this subject.

The conference also advocated the development of scientific methods of controlling the basins and protecting their soil by planting trees and plants. This would be of great economic and social utility for the residents of the basin.

After emphasizing the necessity of mobilizing human and material resources in order to implement the plans for erosion control, the conference further recommended, with respect to the documentation and collection of data, strengthening the central Arab bank in order for it to become a data bank for water resources.

The participants called on the Arab countries to create similar banks containing data on surface and subterranean water resources.

They urged the authorities responsible for oil and mining prospecting to facilitate access to geological, geophysical and hydrological information on the upper deep water tables, and authorities entrusted with water resources to require the firms working in this field to place adequate information at their disposal.

The conference also urged the Arab countries to furnish recent studies and research on water to the Arab Center for publication and distribution to the Arab countries.

Rationalizing the Development of Resources

With regard to energy, the conference recommended the following:

1. Giving the necessary attention to development of substitute energies and to new and renewable energies, as well as to the field of development of water resources.

2. Better planning for the exploitation of renewable resources.

3. Calling for the creation of an Arab research center with a view to developing Arab technologies with respect to renewable energies and strengthening this center in equipment and human terms in order for it to be able to play its role appropriately.

Concerning the rationalization of the development of water resources, the conference recommended:

--Rationalizing the development of water resources with a view to better use of these resources for the welfare of Arab society, for the realization of its national objectives and, first and foremost, food security. This requires the following:

--In terms of planning:

--Undertaking good planning for the development of water resources in riparian countries, on the national level and on the level of the Arab world. This planning must be based on the principle of complementarity between the development of subtarranean and surface waters, on the quantitative as well as qualitative level.

--6. Considering water as an essential factor which dominates the development program.

--Having the representatives of the beneficiaries participate in the phases of planning and implementation and in the operation of equipment in order to make them conscious of their responsibilities with respect to rational use of water and making the people more aware.

Avoiding Waste

2. With respect to legislation:

A--Insisting on the recommendations adopted by the conference on the legislation of water in the Arab world organized by the Arab Center in Damascus between 16 and 19 March 1980.

3--In the field of organization:

A--Emphasizing the establishment of a superior national organization whose responsibility it would be to determine water policy and control its application.

B--Making recommendations to the parties responsible for prospecting, development and administration of water.

4. In terms of developing water resources:

A--Rational mobilization of water resources, taking into consideration, if necessary, transferring waters from one basin to another in light of the socioeconomic needs of the principal basin by taking advantage of the technologies of subterranean and surface water reservoirs.

5. As for economy in the use of water:

A--Determination of needs with respect to water in different fields such as irrigation, industry and domestic and municipal use with a view to avoiding overestimation of supply.

6. Taking into consideration measures capable of preventing waste in the use of water at the level of equipment and exploitation.

C--Working for the re-utilization of water in all sectors, particularly in irrigation and industry.

Protecting the Environment and Water Quality

Protection of the environment and water quality:

A--Undertaking preliminary studies and research on the present state of pollution and the effects of urban, industrial and hydraulic establishments on limiting repercussions on the hydraulic environment and the ecosystem.

B--According particular importance to water quality in developing plans and texts of laws organizing water use.

C--Taking the measures and making the technical arrangements necessary for all stages of use in order to limit pollution and develop a national pollution control program concerning surface waters or waterbearing beds at present.

The legal side:

A--Preserving Arab rights on the regional and international scale and strengthening Arab efforts to consolidate absolute sovereignty over water resources and Arab maritime passages, especially Shatt-al-Arab, which is of vital importance for the Arab Gulf.

B--Consolidation of the Arab right to the Gulf of Syrte.

With respect to the occupied Arab territories, the conference energetically condemns the bellicose project that the Zionist entity is planning to implement, aiming at cutting a canal connecting the Mediterranean to the Dead Sea. It urges the Arab Center to prepare a scientific study on this subject, showing in detail the dangers which could result from this project in order to make Arab citizens aware. It calls on the Arab states to work to stop this project by taking steps with the different international authorities.

The conference reaffirms the recommendations of the Mar del Plata meeting in 1977 denouncing the water policy of the Zionist enemy on the Right Bank of the Jordan and calls on the Arab states to denounce this policy.

The conference called for the project to divert the waters of the Nile to the Sinai and to supply the Zionist enemy with it; this would contribute to the settlement of a great number of problems it is encountering with respect to water resources.

9380
CSO: 5000/5004

BRIEFS

DANGEROUS SHELLFISH--The fishing of "mabanga" [type of shellfish] has become very common in Luanda in recent years. The danger of poisoning is permanent, but it does not seem to frighten some tens (or hundreds) of improvised fishermen who enter the bay daily to fish for such dangerous shellfish. From an environmental point of view, the bay of Luanda is completely contaminated. "Mabanga" can be a very dangerous vector. But the "mabanga" fever continues daily to send many people into the bay, looking in the mud for what can only be prejudicial to the people's health. The competent authorities must take immediate measures to counteract this situation. The health of all those who buy the contaminated "mabanga" the next day at speculative prices all over Luanda is at stake. [Text] [Luanda JORNAL DE ANGOLA in Portuguese 3 Nov 81 p 2]

CSO: 5000/5619

BRIEFS

POLLUTION LAWS--South Africa is years behind Europe and North America in cleaning up air pollution, Mr James Clarke of THE STAR's CARE campaign said in Cape Town this week. The Government's Department of Health is now down to seven air pollution inspectors to police the country's large industries which carry out more than 2,000 strategic processes. "Not enough to even police an average industrial town." Speaking at a National Association for Clean Air seminar, he said the greatest contribution to clean air had been mede by householders. Thousands had been fined for lighting bonfires. "But big industry faces fines of only R200 for a first offence and R1,000 for a second. There is a distinct smell of fish in our antipollution laws." He said the nature of emissions from large industries were secret. Some of the gases the public was inhaling were known to be highly dangerous. [Text] [Johannesburg THE STAR in English 30 Oct 81 p 11]

CSO: 5000/5618

U.S. EXHAUST EMISSION LAWS URGED AS MODEL

Stockholm DAGENS NYHETER in Swedish 29 Oct 81 p 34

[Article by Gunilla Wetterlundh]

[Text] The best way to get cleaner air in Stockholm is to introduce advanced emission control systems on the cars corresponding to the requirements in the United States. All the substances known that are emitted with the exhaust fumes would then become substantially reduced, more than for example with cars driven with gas.

Therefore the country should primarily work on getting stricter emission regulations, instead of carrying out a more extensive change over to gas as fuel for cars. This is the opinion of the environment and public health committee stated as a response to a proposal by the Stockholm party. The proposal presents a quick change over to the use of gas for fuel for the country's cars in order to cut down the air pollution.

Experiments have been going on for some time with gas driven country cars. 500 cars will be bought during the next 2 years. SL [the Greater Stockholm Public Transport Company Limited] also has experimental activities with buses that use methanol for fuel and there are plans to introduce two battery-powered buses in traffic. According to the environment and public health committee these experiments have to be carefully evaluated first.

The officials of the board have, however, made some calculations that show how much cleaner the city air can become with the use of alternative fuels and emission control systems respectively.

These calculations show that if all diesel fuel operated vehicles and 30 percent of the gasoline operated passenger cars would use gas for fuel, the result would be a remarkable decline in hydrocarbons, carbon monoxide, lead and dust. There would, on the other hand, be more nitrogen oxides and aldehydes in the air. If methanol would be used for fuel the air quality would also improve. The lead level would, above all, decline by 30 percent, but there would also be a decline in dust and polyaromatic hydrocarbons.

Electricity is also efficient, but it would then have to be introduced not only for buses, but also for most of all other vehicles.

Good Results Obtained with Advanced Exhaust Control

Advanced exhaust control lead to very good results according to the calculations. If 30 percent of the passenger cars in Stockholm would be equipped with advanced emission control systems the level of carbon monoxide and hydrocarbons would decrease by 25 percent, nitrogen oxides by 20 percent and lead by 30 percent.

In order to introduce advanced emission control it would be necessary to have negotiations with the gasoline companies regarding lead-free gasoline. The emission control systems of the cars would also have to be continuously checked and kept intact.

The air in Stockholm has already improved somewhat. Since the lead content of high octane gasoline was lowered in April the lead concentration of the air has also gone down. Hornsgatan is the big exception--there the objectives of the country are regularly exceeded.

9662
CSO: 5000/2014

LAKES NEAR STOCKHOLM SERIOUSLY POLLUTED BY MERCURY

Stockholm DAGENS NYHETER in Swedish 14 Oct 81 p 20

[Article by Tore Allen]

[Text] The lakes of Roslagen seem to resist acidification well despite being so close to Stockholm. Several likes are, however, in the danger zone with regard to mercury. Blacklisting is threatening several of the pretty little lakes of the Riala area, classified as a region of nationwide interest for outdoor life.

The environment protection unit of the County Council has studied 69 of the 92 lakes of the Riala area. Many of these are forest lakes, low in nutrients, and with very clear water. This type of lake is usually very sensitive to acidification. Despite this the Riala area lakes show, with few exceptions, high pH values.

"The high resistance against acidification is probably connected to the fact that the lime that the inland ice transported from the bay of Gavle southward over Uppland is still able to neutralize the acidic drop-off," says Par-Olof Danielsson, who has been the leader of the field work and who has put together the investigation report.

Regarding other impurities, for example heavy metals, higher levels have been found than for earlier samples of the forties and fifties, but they are not so high that one could in any way consider the situation alarming. The sulphate level has increased especially, but one does not have to blame that completely on the sooty air of the Stockholm area of deposits from the industries of Western Europe. It may partly be a matter of ground chemical precipitations. The most remarkable result of the study is that the clear and clean Roslagen lakes seem to be very capable of assimilating mercury out of the amounts created in the atmosphere of Western Europe by industries and cars. Pikes have been caught, with mercury levels higher than the recommended limit of one milligram per kilogram, from Bjorndalssjon, a lake for licensed fishing, a clear little pearl, situated in forests and fields. Storsjon and Hersen are two other lakes where the pikes have high levels of mercury.

"We want to emphasize, however, that the very limited study material makes it impossible to draw certain conclusions, states Par-Olof Danielsson. If a pike that weighs half a kilogram has a high level of mercury, it is not certain that all pikes of the same weight do. The larger pikes have also shown very varying levels. It is very expensive to analyze the mercury concentration and we have not been able to afford more than a small number of samples from each lake."

9662
CSO: 5000/2014

END

JPRS 79719

23 December 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 331

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

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LABOR SPOKESMAN WARNS OF LOGGING THREAT TO RAINFOREST

Brisbane THE COURIER-MAIL in Englsh 6 Oct 81 p 37

[Text] Tropical rain forest areas in far north Queensland would be extinct in five years if logging continued at its present rate, the opposition lands spokesman, Mr Kruger, claimed yesterday.

Mr Kruger said a large amount of research should be done before any further logging was accepted in virgin forests.

"At the moment, five timber millers are exploiting the Mount Windsor Tableland (40km northwest of Mossman) and there is very little natural rain forest remaining," he said.

"The State Government should impose rigid controls on the logging in the area to ensure that we save what we have left.

"A limited number of logs can be taken out of the natural rain forest areas without damaging the ecology, but at the moment, timber millers are chasing every log.

"They won't be able to continue without destroying the last of our rain forests."

Mr Kruger said that in the past, very little money had been allocated in the State budget to the reafforestation of these areas.

He said most of Queensland's rain forest areas, between Cooktown and Ingham, had been denuded for agriculture.

"It's in the interest of many people that the last of these natural areas be preserved," Mr Kruger said.

The State Lands Minister, Mr Glasson, said yesterday Mr Kruger's comments were irresponsible and uninformed.

"I don't suppose he mentioned that 60,000 acres (24,000 hectares) of tropical rain forest in the area had been put aside as national park," he said.

"The State Government has taken all necessary steps to ensure that a good part of the rain forest is preserved.

"A very thorough study of the area and the timber industry has just been completed and it was put before Cabinet last week.

"Economists and scientists from all walks of life have been consulted and I am quite sure the appropriate action has been taken."

Mr Glasson said the report should be tabled next week.

CSO: 5000/7510

CITIES' POLLUTION PROBLEMS REVIEWED

Madras THE HINDU in English 10 Nov 81 p 17

[Text] Perhaps the only recorded case of a death because of excessive noise occurred a few years ago in Calcutta. One of the most promising writers in Bengali, Narayan Gangopadhyay, passed away even before he had crossed the middle fifties.

Ironically enough, the death took place at precisely the period when the supposedly cultural capital of the country was at its best, during the Pujas. Mikes were blaring night and day, driving people in many areas into a state of dull stupor. Gangopadhyay knew he was going to die, and probably fearing inaction, had not even approached the police.

Barely a week before the swinging season, he had written in his weekly column in a contemporary: "This time, I do not think I can survive the torture of the loudspeakers." Days later, his glum prophecy came true and Calcutta had its first martyr to noise.

After this, the administration at any rate could not very well deny that noise pollution had already reached abominable levels in Greater Calcutta and that further inaction could prove fatal.

Lesson Not Learnt

Unfortunately, the lesson has remained surprisingly unappreciated. Only months ago, another stalwart of Bengali literature, Suobdh Ghosh, felt a pain in his chest at his Salt Lake home and later went into a coma, from which he never returned. During the entire period of his heart attack, mikes had been playing in the locality and one of his sons later complained bitterly about this.

In neither case, the conscience of the Government of West Bengal--under the Congress (1) and the CPI (M), respectively, at the time of the deaths--was stirred into any kind of action. Yet, the use of loudspeakers is supposed to be regulated by the police, who are also expected to prevent their overuse during the crisis Puja periods.

If these are only two recorded victims of noise pollution, there is no way of course, of knowing how many lesser mortals might be on their untimely way to a quick grave, unregretted and unsung by the administration every year all over the State.

The Indian Science Congress sailed into its 68th year early this year and held its session at Varanasi. The focal theme was environmental pollution. Like most other problems which have assumed critical proportions here as well as elsewhere, local experts find that they know what is happening abroad far better than here. Apart from occasional snippets of alarming information laboriously garnered from different areas, not much is known.

In the eastern region, it is known, for instance, that in South Bengal, in several districts the presence of hydro-carbons in the dust was computed at around 30 to 35 percent, whereas the humanly tolerable level had been left way back--five to 10 percent only.

Ground Water Pollution

In the heavily industrialised Hoogly district, following certain complaints, it has been found that even groundwater sources, let alone rivers, had become polluted. The agricultural yield had fallen substantially in several areas, despite the massive injections of fertilizers to coax the soil into giving its familiar best.

Further away in Bombay, the journal "New Scientist" once reported that fish, meat and vegetables called cluster beans sold in the city, contained an excessively high level of toxic mercury. Behind the metallic pollution of food in Bombay, it was explained, lay the sad fact of a reckless discharge of effluents by various industries into the river systems. Cadmium, lead and copper also present in substantial proportions in the vegetables, complete the dirty business of wholesale food adulteration.

Industrial Contamination

In Calcutta again, it has been officially admitted that the Victoria Memorial Hall would be scarred permanently because of rampant industrial pollution. Official organisations like the Metro Transport Project and the Calcutta Metropolitan Development Authority, apparently do not observe stipulated pollution measures.

The irony is that when Lord Curzon had decided to build the hall in 1903, he had also taken care to introduce the Bengal Smoke Nuisance Act, barely two years later, with a view to protecting his beloved memorial. Clearly, Indians who have taken over can be accused of adopting a kind of ruthless attitude towards their ancient monuments. Some of the marble statues in the memorial would never regain their original colour, and the same goes for some of the magnificent paintings.

Its very foundation has developed cracks, as acidic rainfall has set off a cancer of the soil. Yet, one of the technicians associated with the three-year survey conducted by the Smoke Nuisance Department said that "we do not expect any official action to follow, although we have given in detail the remedial measures that must be taken to protect the memorial hall."

"Frankly, money would change hands at the top level and the private industry at any rate can get away with blue murder if it so chooses. Where Government departments like the MTP of the CMDA are themselves at fault, you just waste your breath complaining about them. I sometimes wonder whether we are sufficiently civilised to realise that if this goes on unchecked, it won't be just buildings and monuments tomorrow--we would begin to choke in the mess of our own polluted surroundings. Only, they cannot say that warnings were not given."

Cesspool

These are the random facts. Systematic studies have shown that the environment from which people draw their sustenance is rapidly becoming a highly polluted cesspool.

Calcutta probably has the credit of being the only major city where a thorough survey of the pollution problem was undertaken from January 1976 to June 1980, by the Smoke Nuisance Directorate, under the guidance of Mr S.C. Banerjee, Chief Inspector.

The area under survey consisted of the Corporation wards. The survey had been ordered by an expert committee set up to work out recommendations to modify the existing Municipal Act.

Excerpts from the report make interesting reading. The State Government to be fair, just does not have the legal or administrative equipment to fight what has already become an all-pervasive health menace.

The concentration of SO2 H2S and acid aerosoles are quite high in many residential and office areas. These are mostly due to automobile exhausts, rotting garbage over which there is no statutory control at present. High ground level concentration of non-toxic particulate matters is mostly due to undisciplined earth work and construction work of various agencies. High lead concentration is due to automobile exhausts, battery makers, lead-refining factories, rotary printing presses and foundries.

Air Pollution

"High noise level in many areas is due to transport vehicles, hammer blows, large press machines, diesel generators. High ground level concentration of offensive odour is mostly due to rotting garbage and community waste."

At a different level, where air pollution is concerned, the report notes that "there is a general tendency to disperse the air pollutants either from chimney tops or at ground level, resulting in high emission of air pollutants.

The cause of such problems is due to inadequate technology, inadequate consultancy, lack of R and D facilities, improper plant management, inadequate statutory provisions and inadequate staff of the supervisory agencies. Above all, there is a gaping management gap at the Government plant supervising consultancy and the planning levels."

The inadequacy of staff portion is certainly well applicable to the Smoke Nuisance Department itself, a tiny cubbyhole of an office, from which well-intentioned Lilliputs are supposed to take on the mighty giants of private and public sector industries.

The remedial measures mostly have to do with preventive steps aimed at checking the rampant fouling up of the atmosphere and the specifics of a new garbage disposal system, a problem that has always seemed to baffle the wizards of the corporation.

CSO: 5000/7015

ORGANIZED PLUNDER OF RICH FOREST REPORTED

New Delhi PATRIOT in English 10 Nov 81 p 4

[Text] Baripada, Nov 9 (UNI)--Organised plunder of the forest wealth in Simlipal, one of the richest forest belts in the country, has assumed alarming proportions.

Thousands of people, mostly tribals, daily hack down trees and sell them as firewood without knowing what precious species of flora they are destroying.

There had always been occasional collection of headloads of firewood from the forests but now this has grown into a regular plunder, mainly because of the indifference of forest officials.

The pillage takes place during the night. In the morning, one can see hundreds of people making their way to towns with their looted merchandise.

The wood is being sold from Rs 14 to Rs 18 a quintal, depending on the bargaining capacity of the purchasers. At some centres middlemen have sneaked into the business and are making bulk purchases from the tribals at Rs 15 a quintal. The wood is then transported to bigger towns in trucks and sold at Rs 50 a quintal.

All this goes on in spite of a vast array of forest officers, and at least three different organisations to look after the famous tiger reserve.

The three organisations have a plethora of officers to look after the affairs of the Simlipal forests. They include nine divisional forest officers, five assistant conservator of forests, one conservator of forests and one additional chief conservator of forests. These are besides an army of forest range officers and forest guards.

Yet, the looting continues unabated, and conservation has become nobody's business.

There are allegations that officers of the State-owned Development Corporation are accomplices in this plunder.

Besides ransacking the forests for firewood, the pirates take away valuable timber like rosewood sal and paisal. These have fixed buyers in the plains.

CSO: 5000/7017

BRIEFS

AFFORESTATION PROGRAM INITIATED--Prime Minister Surya Bahadur Thapa initiated the afforestation programme launched to celebrate the 33rd auspicious birthday of Her Majesty Queen Aishawarya Rajya Laxmi Devi Shah by planting a Pinus Roxburghil sapling at Bhaisepati village of Saibu village panchayat this morning, reports RSS. The afforestation programme launched jointly by Her Majesty's 33rd auspicious birthday celebration committee and the Afforestation office of the Forest Department was participated in by ministers, office bearers and members of Her Majesty's birthday celebration committee, officials of the Royal Palace and Forest Ministry, panchas and the local people. Altogether 1,470 different varieties of saplings were planted in an area stretching over eight ropanis of land (0.4 hectares), it is learnt. The land made available by Saibu village panchayat for the afforestation office. Technical assistance has also been made available for preservation of the saplings planted. [Text] [Katmandu THE RISING NEPAL in English 7 Nov 81 pp 1, 6]

CSO: 5000/4905

LABOR PARTY PLEDGES STRONG STAND ON ENVIRONMENTAL ISSUES

Christchurch PRESS in English 29 Oct 81 p 26

[Text]

Auckland

The Labour Party has pledged to pass legislation if it becomes the Government to ensure that the Commission for the Environment can "speak out fearlessly."

The Deputy Leader of the party (Mr Lange) said at a meeting in Howick that the Government had made it known its displeasure with the commission when the commission performed its auditing role, especially in relation to the "think big" projects.

Presenting Labour's environmental policy, Mr Lange said that the commission existed as "a creature of a Cabinet minute, a very uncertain future indeed."

Labour would make the commission legislatively independent. The commission and not the Cabinet would decide when an environmental-impact report was required.

Mr Lange said, "We are going to give the commission its integrity and independence by legislation so that it can be highly mobile, effective, and hard-hitting. Certainly at times it will embarrass us as government but that means the commission is doing its job."

Mr Lange said that present restrictions which stopped the commission from investigating social and economic aspects of projects would be ended. The commission would have an important and expanded role and its investigations, apart from being independent, would be broadened.

Labour would ensure that all environmental and planning legislation would bind the Crown.

Labour would also reform the Environmental Council to ensure that it was truly independent and able to back up the Commissioner for the Environment in his role as public advocate.

The council, which includes representatives of environmental groups, would no longer have Government representatives on it and would provide external, independent advice to the Government on environmental matters. It would act as a guardian of the environment.

Labour saw the environment as being as much concerned with jobs, industry, health, and safety as it was with flowers and endangered species. The National Party regard the environment in an isolated fashion, separate from economic issues.

Labour would also review and consolidate all planning and environmental legislation.

Under National, a robber economy had developed. Labour would build a sustainable economy where conservation and development were fully integrated.

Details of Labour's policy include:

- Inventories would be established of wetlands and rivers with special qualities. Legislation would protect rivers identified as having special qualities.
- The Water and Soil Conservation Act, 1976, and the Soil Conservation and Rivers Control Act, 1941, would be revised and consolidated.
- All legislation relating to prospecting and mining would be reviewed. Labour would ensure that the review guarantees effective public participation.
- All mining proposals, particularly large-scale open-cast schemes, would be carefully scrutinised to ensure that they are in New Zealand's interest and represent the best use of land resources. Labour would reject large-scale open-cast mining on the Coromandel Peninsula.
- A resource recovery and management unit would be established in the Trade and Industry Department. It would investigate recycling and would initiate legislation relating to matters such as the banning of non-returnable bottles. Tax reform, loans, interest rates, and grants would make conservation and recycling more attractive to industry and commerce.
- The National Development Act would be repealed.
- The "more environmentally sound" low-dam hydro-electricity scheme on the Clutha River would be supported "if it was practicable to change the decision."
- The price of electricity to South Island domestic consumers would be reduced by 25 per cent.
- An independent committee would be established to evaluate overseas reports and studies about the possible danger from the use of the chemical 2.4.5-T. The committee would consider whether any form of inquiry should be conducted in New Zealand and would advise generally on the question. A clear, firm decision on the matter would be made within a year of the committee's reporting.
- Legislation would be enacted to free coastal and inland waters from pollutants. A working party under the Environmental Council would prepare a scheme for protecting the coastline, coastal waters, and the seabed.
- The Town and Country Planning Act would be amended so that the Minister of National Development would be able to advise the Planning Tribunal that a particular issue was of national importance and should be dealt with as a matter of priority. The Government would not be able to over-ride the tribunal's decision or limit appeal in the courts.
- Labour would recognise the "valuable" work done for the environment by volunteer groups, would encourage local authorities to support such groups, and would offer accommodation for environment centres in main cities. Labour "sees volunteer environmental organisations as the Minister's best friends and partners in a common cause, not as threatening enemies from whom information must be kept."

Mr Lange said that citizens would be encouraged to play an active role in environmental planning. This would be aided by freedom-of-information legislation, an education programme on public participation in environmental matters, support for volunteer groups, and better arrangements for responsibilities in Government departments.

CSO: 5000/9051

CLEAN AIR AMENDMENT BILL TIGHTENS POLLUTION CONTROLS

Christchurch PRESS in English 24 Oct 81 p 12

[Text]

The Clean Air Amendment Bill, given its first reading in Parliament this week, tightens controls on pollution and allows for special assistance to householders to convert to less polluting fuels.

The bill did not issue from special pollution problems in Christchurch, but its measures will have effect there.

It gives power to the Health Department to close industries not complying with the terms of their licences, and introduces a new method of measuring noxious emissions at night-time — designed to prevent the practice of heavy night-time discharges which cannot at present be proved.

It was generally regarded that Health Department officers had the power under the Clean Air Act to shut down processes which were hazardous to health, said the Minister of Health (Mr Gair) but a 1978 case showed that this was not so, and the amendment rectified this.

Night-time emissions under the act could not be adequately policed because a successful prosecution depended on an "occupier knowingly" failing to meet his licence obligation. The wording of the act also excluded the use of a special photo-electric method of measuring pollution. This method detected pollution at night.

Under the bill there is no longer a need to prove that the occupier acted knowingly.

Mr Gair said that the special subsidies to local authorities to help them make loans or grants to people wishing to convert from polluting fuels, was an admission of the Government's responsibility to ensure that the "right things were done with the minimum delay."

The $300,000 annual grant to Christchurch local authorities last month to permit interest-free loans for home insulation was a precedent for this provision in the bill.

Mr Gair said Christchurch was the only clean air zone in New Zealand, and it was an enigma to some that it was far from unpolluted during the winter.

The zone had been created to control pollution from domestic open coal fires, but it had been impossible to achieve this by law, even though experts had shown that reduced burning of coal on domestic open fires was in the individual's best interests.

This was partly because of a "great reluctance" in the public, particularly in the elderly, to convert to non-polluting electricity.

"While we accept the direction and control of these domestic emissions is primarily the responsibility of the local authority, equally central government has a responsibility to intervene," Mr Gair said.

The closing of any polluting enterprise by the Health Department was subject to appeal. The bill made the occupier of any premises strictly liable for any pollution he created, subject to the defence that all reasonable steps were taken to prevent the offence, he said.

The bill retained the "basic commonsense" requirement that industries adopt the best practicable means to control pollution. This meant industries were considered on a case-by-case basis.

"We do not expect the small polluter, by nature of his small size, to have to install expensive and complex equipment which may be necessary in the case of a large polluter," Mr Gair said.

"It is no more sensible to require uniform control standards from industry, wherever located, than to suggest that open domestic coal fires should be banned everywhere because they are a problem in Christchurch."

The bill extends the licensing period from 12 months to any period specified in the licence. The change is to tidy up administration.

The extended period would not prevent effective control of pollution, Mr Gair said, because there were means in the act to alter the conditions of a licence.

The bill allows changes in fuel type or fuel burning equipment to be gazetted, rather than approved by Order-in-Council. This was because these were subject to fairly frequent change, and approval by Order-in-Council produced delays.

Although environmental groups wanted a say in setting licence conditions this had been dismissed by several Parliamentary committees on the grounds that the public interest was adequately safeguarded during town-planning hearings that were a prerequisite to a clean air licence.

"Public participation in setting licence conditions is most unwise in view of the specialist and highly technical nature of the issues involved, and is rightly the prerogative of trained staff," Mr Gair said.

CSO: 5000/9051

NATIONAL PARTY POLICY ON PROTECTING ENVIRONMENT RELEASED

Auckland THE NEW ZEALAND HERALD in English 5 Nov 81 p 24

[Text] Economic development went hand-in-hand with the protection of New Zealand's natural heritage, the Minister for the Environment, Dr Shearer, said in the National Party's environmental policy which was released yesterday.

The party was committed to protecting the environment as much for the present as for future generations, he said.

A National government would continue to preserve areas which contained unique ecological systems, scenery of distinctive quality or natural features which were beautiful, unique or scientifically important.

Greater public and local body participation was being encouraged through amendments which had been made to the Mining Act.

"The amendments remove the prospector's automatic right to a mining license; require that public notice be given of applications, and provide for hearings before a planning tribunal," said Dr Shearer.

Urban Renewal

Because most New Zealanders lived in the cities, it was important to protect the urban environment.

"Under National, extensive urban-renewal programmes have been undertaken. Redevelopment programmes ensure optimum land use while rehabilitation programmes ensure the best utilization of existing housing stock.

"Conservation programmes will ensure the preservation of buildings for their architectural, historical or aesthetic qualities," said Dr Shearer.

In the past four years, the volume of timber taken from native forests had reduced by more than half.

Native Timbers

"Management policies are directed towards a further 80 percent reduction over the next decade. National's long term policy is to reduce the milling of native forest to the point where our native timbers are being used only for specialist functions," he said.

The Government had launched a campaign to protect New Zealand's rare and endangered wildlife species. Logging in South Okarito had been halted to protect the South Island brown kiwi, and a moratorium had been imposed on logging in the Pureora and Puketi state forests to protect the kokako.

Wildlife Research

Legal protection had been provided for a number of land and freshwater animals and an enforcement unit had been established to provide protection against poachers who sought to exploit protected wildlife for economic gain.

A committee to coordinate wildlife research had also been set up. Two marine reserves had been established.

CSO: 5000/9052

RESTRICTION OF ENVIRONMENT COMMISSION ROLE UNDER STUDY

Auckland THE NEW ZEALAND HERALD in English 7 Nov 81 p 1

[Text] **Government fears that the Commissioner for the Environment is damaging prospects for investment in major industrial development have prompted further advice from officials on how to restrict the commission's watchdog role.**

A set of proposals put forward by the departmental advisers to the powerful cabinet economic committee is the latest of a series of recommendations on the commission's activities dating back to late last year.

A report to the cabinet committee in December advocated, among other things, that the commission should not longer consider the human or social consequences in vetting development proposals.

A debate ensued which included claims by the MP for Hamilton West, Mr Michael Minogue, that moves were afoot to slash the independent powers of the commission. The debate reached its peak when the commission's role was modified by an amendment to the National Development Act passed by Parliament at the end of this year's session.

Discouraged

And, in spite of protestations by the Government that there has been no intention to alter the essential principles by which the commission acted, the latest officials' report makes it clear that the role of the independent agency is still in the melting pot.

The report was requested on the basis of cabinet concern that the commission fosters "an unbalanced perception of the costs and benefits attendant upon the environmental standards required for projects and, hence, damages New Zealand's investment climate and its prospects for economic progress."

The statement has been interpreted as indicating fears that prospective developers would be discouraged by the zeal of the commission's researchers and the scope of their investigative brief.

The fears led to a recent inquiry by officials into whether the commission, in its auditing of environmental impact reports, should give information on alternative technologies or pollution control systems to those proposed by a developer.

Most Suitable

The officials, it is reported, recommended that developers need not describe in their impact reports any alternative technologies to those which they had already chosen.

An alternative pollution control technique (which may or may not be preferable to the one selected by the developer) would thus not be described in the impact report, for example.

And the commission would be unable to consider the merits of the options which had been available.

The officials recommended that alternative techniques should be described in an impact report in cases where the developer had not yet selected those considered by him to be most suitable.

But they also advised that the commission, although able to comment on the various options, should not be allowed to make its own judgment as to which one was preferable overall.

The officials agreed that the Environmental Protection and Enhancement Procedures, setting the ground rules for assessing environmental impacts, would be revised in the light of their findings.

Only Barrier

The revision will also take into account a Cabinet decision that environmental audits will be confined to vetting the statements made in an impact report, including, if any, those on technological options.

Ironically, the officials found that the only barrier to implementing their advice was presented by the National Development Act — the target of vigorous and continuing criticism by conservationists.

Under the act the commission is said to be independent and free of Government direction.

For projects to which the act had been applied, the officials' recommendations, if adopted, could therefore constitute only advice to the commission.

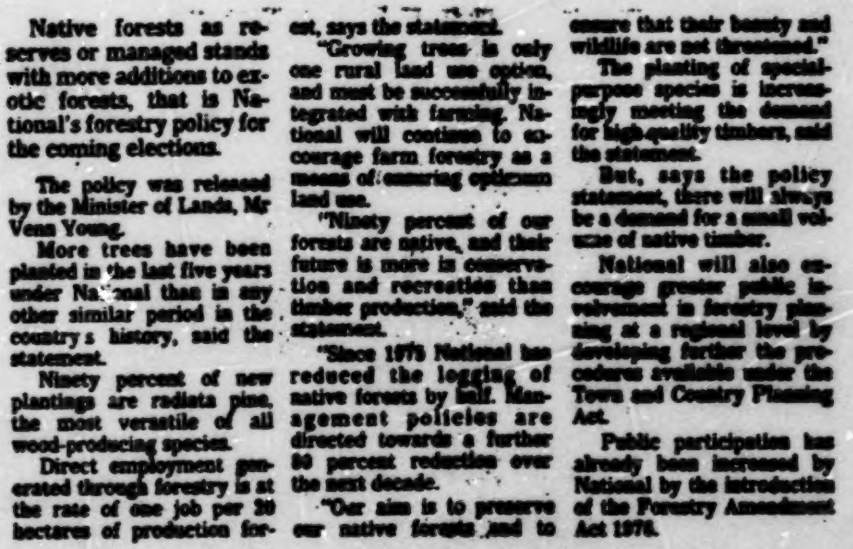
It is understood the advice could be enforced in cases where the act had not been invoked, however, and that there would be considerable pressure on the commission to accept it in all circumstances.

CSO: 5000/9052

NATIONAL PARTY ANNOUNCES POLICY ON PRESERVING FORESTS

Wellington EVENING POST in English 24 Oct 81 p 17

[Text]



Native forests as reserves or managed stands with more additions to exotic forests, that is National's forestry policy for the coming elections.

The policy was released by the Minister of Lands, Mr Venn Young.

More trees have been planted in the last five years under National than in any other similar period in the country's history, said the statement.

Ninety percent of new plantings are radiata pine, the most versatile of all wood-producing species.

Direct employment generated through forestry is at the rate of one job per 20 hectares of production forest, says the statement.

"Growing trees is only one rural land use option, and must be successfully integrated with farming. National will continue to encourage farm forestry as a means of ensuring optimum land use.

"Ninety percent of our forests are native, and their future is more in conservation and recreation than timber production," said the statement.

"Since 1975 National has reduced the logging of native forests by half. Management policies are directed towards a further 80 percent reduction over the next decade.

"Our aim is to preserve our native forests and to ensure that their beauty and wildlife are not threatened."

The planting of special-purpose species is increasingly meeting the demand for high-quality timbers, said the statement.

But, says the policy statement, there will always be a demand for a small volume of native timber.

National will also encourage greater public involvement in forestry planning at a regional level by developing further the procedures available under the Town and Country Planning Act.

Public participation has already been increased by National by the introduction of the Forestry Amendment Act 1976.

CSO: 5000/9051

CONSERVATIONISTS SEE LAND SCHEME THREATENING FORESTS

Auckland THE NEW ZEALAND HERALD in English 5 Nov 81 p 8

[Text]

Wellington

Conservationists are concerned that a new Government land development scheme will endanger native forests.

The scheme, announced by the Minister in Charge of the Rural Bank, Mr MacIntyre, designates several areas as rural resouce development zones where preferential assistance with farm development finance will be available.

The president of the Native Forests Action Council, Miss Gwenny Davis said in a statement yesterday that the four designated regions included the major remaining areas of potentially exploitable native forest in New Zealand — Northland, the East Cape region, the King Country and the West Coast of the South Island.

Over the past four years cheap finance from the Rural Bank had been responsible for clearing 19,000 hectares of native forest, according to a report from the bank itself, Miss Davis said.

"In the North Island the total area approved for clearance up to last September represents almost 10 per cent of the remaining potentially exploitable native forest in private ownership," she said.

"All such forest will be gone in a little over 20 years, if the present rate of land clearance is allowed to continue."

Until now Mr MacIntyre had insisted that the Rural Bank, in spite of being a Government agency, had no responsibility to consider the environment when handing out money to farmers, Miss Davis said.

She challenged Mr. MacIntyre to clarify whether it was his intention that the bank should subsidise the destruction of native forest, under the new scheme.

Miss Davis said she had no particular objection to farmers getting taxpayer handouts for development purposes, so long as the money was not being used to subsidise the destruction of native forests.

CSO: 5000/9052

ENVIRONMENTAL PROTECTION PROBLEMS, SHORTCOMINGS DISCUSSED

Warsaw PROBLEMY in Polish No 10, Oct 81 pp 8-12

[Article by Dr Mieczyslaw Gorczyca: "Some Thoughts on the Law"]

> [Text] The legal problems relating to the protection and development of the environment and the efficient utilization of its resources require that the legal standards be codified. This requirement had not been fulfilled until 1980. However, on January 31, 1980 the Polish People's Republic Sejm passed an environmental protection and development law. This law, together with several mandatory and optional executive regulations, formed an internally consistent and uniform system codifying the legal standards on environmental protection. Thus we have a good legal system, but what next?

The most important provision in the law, which is a detailed interpretation of article 12 of the Constitution of the Polish People's Republic, is the assertion that "the Polish People's Republic assures the protection and efficient development of the environment which is a national asset and creates conditions favorable for the implementation of the rights of the citizens to take complete advantage of the qualities of the environment".

The provisions of the law on environmental protection and development went into effect on September 30, 1980. Of particular importance was the provision for the formation of a State Inspectorate for Environmental Protection under the Ministry of Administration, Local Economy and Environmental Protection, headed by the Main Inspector of Environmental Protection. In addition, a State Council on Environmental Protection was formed, which is an advisory and consulting organ of the Council of Ministers.

The law gives special protection to the natural resources of the environment, which in satisfying socioeconomic needs "can be used only as provided for in the national socioeconomic plans and plans on territorial development and in environmental protection regulations" (article 4). Environmental protection is an important element in that state's socioeconomic policy and its needs are an integral part of planned socioeconomic tasks. Of the general principles on environmental protection and development, the statement (article 7, point 2) that an administrative decision that conflicts with environmental protection requirements is invalid, deserves attention. Here we should express some misgivings on whether such a conflict will always be punished as the law provides.

In the pragmatic sense, the most important provisions of the law are those grouped in section 3 (Execution of Environmental Protection, articles 64-73) which contain the duties of organizational units and individuals in this field, restrictions on utilization of environmental resources, and the standards applicable to machinery and other technical equipment. The provisions require that organizational units and individuals which conduct or intend to conduct economic activity which may be harmful to the environmental, must apply measures to ensure that the environment will be protected (article 64). This applies also to persons using the environment for purposes of travel or recreation.

All participants of the investment process are obliged to comply with regulations on environmental protection. No "newly built or modernized construction facility or group of facilities can be released for use if the environmental protection equipment required by regulations or within the framework of the involved investment has not been provided" (article 68). Machines, raw materials, and domestically produced and imported fuels should comply with environmental protection requirements.

Damage done to the environment by noncompliance with the strictly formulated requirements will be cause for punishment. Persons guilty of violations may be arrested, jailed, fined or reprimanded. Depending on the degree of guilt and the effects of the violations of environmental cleanliness (which may be a threat to human life or health, or cause serious economic damage), the culprit may be subject to imprisonment of up to 8 years.

The Law is Not Enough

A reading of articles on environmental protection and development, which were followed by executive regulations, gives pause for much thought. Without a doubt we should rejoice that a legal act of such importance should appear in our country, an act, which if its provisions are complied with, will be a powerful instrument of environmental policy. On the other hand, the functioning of the environmental protection system in our coutry (and not just that alone) points to the fact that even the best legislated regulations will not be the proper remedy.

What is comes down to is that enterprises in the environmental protection and development field must be given an appropriate standing and the appropriate means for this purpose out of the meager funds. Our engrossment with economic growth that can be calculated in zlotys and other advantages has meant that outlays for environmental infrastructure have, and will continue to be, treated quite cavalierly. The situation is even worse now because today during the period of "lean" years in our economy, outlays for environmental protection will be almost nil.

The solution to environmental problems, therefore, must be sought primarily in the formation of an effectively operating system of economic incentives, which would encourage, or actually compel potential violators of the environment to avoid the violations and eliminate the harm. Economic measures in the form of payments for thrifty utilization of the environment or making changes in it may help in solving this problem. These payments will be collected for special use of water, polluting the air, removing trees, using arable or forest lands for other purposes, and for storing waste materials.

Unfortunately, environmental protection requires large sums of money. Therefore, an Environmental Protection Fund is being formed for investments, to support social activities (such as afforestation), and for management of waste materials.

Some great and very exaggerated hopes were linked with the Wisla [River] program. A priority program, of greater political importance than other economic goals that were in competition with environmental protection (the housing construction industry, and the fuel-energy and food complexes) it was to make use of the housing construction potential made available by restricting industrial investments.

Without ignoring the weight of the legal regulations contained in the environmental protection and development law, we have some doubts as to whether all of its provisions will be observed. Will it be possible to categorically observe the law's order "not to release for use facilities (or groups of facilities) if the required environmental protection equipment has not been provided"? Personally, I doubt that facilities scheduled to open will have their ribbon-cutting ceremonies delayed for lack of such an incidental--in the opinion of many decisionmakers--matter as environmental protection equipment.

Environmental Fact-Finding

Socioeconomic development, growth of tourist traffic, general chemical development of the national economy--all of these are responsible for the increased threat to our country's environment. Each year Poland suffers enormous, though difficult to precisely establish, losses as a result of this.

Water management. Poland is one of the poorest countries in Europe from the standpoint of water discharge. During the last 30 years it amounted to 1.6-2.6 thousand cubic meters per year per capita. Of over 14 billion cubic meters of water consumed in 1979, 70.6 percent was used by the national economy for industry, 11.5 percent for agriculture, and 17.3 percent for the municipal economy. Water consumption in the national economy increased over 40 percent in the 1970's. About 85 percent of the consumed water was obtained from surface water intakes and 13 percent was subsurface water and 2 percent was mine waters.

The growth in demand for water caused an increase in sewage discharge. Combined with the cooling and polluted mine waters, 11.7 billion cubic meters of sewage was discharged into the surface waters in 1979, of which about 80 percent was cooling waters. In 1979 2.2 billion cubic meters of sewage was discharged by the urban sewerage system, which, in comparison with 1970, was a volume increase of 57 percent. Of 803 towns, only 350 made use of 424 sewage treatment plants, some of which also service the village areas. Of the total amount of sewage requiring treatment (4,660 million cubic meters), over 2,450 million cubic meters were industrial waste waters and the rest was the already mentioned municipal sewage discharged by the municipal sewerage system.

Without reducing pollutants (untreated sewage) about 2 billion cubic meters of untreated sewage (43 percent) was discharged in 1979, of which 32 percent was industrial waste water and 55 percent was municipal sewage. The sewage treatments plants do not have the equipment to reduce the pollutants adequately. The treatment plants are not able to neutralize the wastes that they receive. Only about one-third of the treatment plants received sewage in amounts which did not exceed their flow capacity, and in almost half the municipal treatment plants the hydraulic load exceeded their treatment capacity by at least one-half.

Most of the treatment plants do not obtain satisfactory results in eliminating pollutants. This is mainly due to the fact that of 424 facilities which treat sewage from 350 towns, 155 of them have only mechanical treatment equipment. Therefore, not only is sewage from 453 towns which do not have sewage treatment plants discharged, but so-called "treated" consumed water constitutes a serious danger to the quality of subsurface water and to biological life. Of the over 4.7 billion cubic meters of sewage discharged into surface waters in 1979, it was determined that over 60 percent of the neutralization of pollutants as a result of the treatment processes was obtained in scarcely 30 percent of the volume of consumed water, of which 34 percent was in industrial wastes and 24 percent in municipal sewage.[1]

In comparison with 1973 in which of 7.3 billion cubic meters of discharged sewage (including 63 percent cooling water) about 2.2 billion cubic meters was sewage requiring treatment, its volume doubled. This was not accompanied, unfortunately, by an corresponding increase in the degree of its neutralization. This is shown by the drop in the share of treated sewage discharged into surface waters, which went from 70 percent in 1973 to not quite 40 percent in 1979. Not without significance in the change for the worse in these ratios is the positive, as a whole, improved quality control in discharged and treated sewage.

The growth in the amount of discharged pollutants had its effect on the cleanness of rivers and other water areas. The degree of change in river cleanness during 1967 to 1977 is shown in Table 1 (in percentage of length of inspected rivers).

Table 1

(1) Klasy czystości	(2) Okres kampanijny				(3) Okres pozakampanijny			
	1967	1970	1973	1977	1967	1970	1973	1977
I	31,6	24,8	23,4	10,1	33,0	24,9	23,6	10,1
II	25,6	29,2	32,2	32,6	28,7	32,2	33,8	33,3
III	14,0	17,7	18,0	25,6	15,5	19,5	18,2	27,0
wody nadmiernie zanieczyszczone (4)	28,3	28,4	26,4	31,7	22,8	23,4	24,9	29,6

Key:

1. Grade of cleanness	3. Non-campaign period
2. Campaign period	4. Extremely polluted water

This shows a very sad picture of the degradation of our rivers during 1967-1977, a period during which the share of our cleanest sewage decreased three-fold.

Water pollution is a threat to the country's economic development and has an adverse effect on the population's living standard and its health. The steady growth in the demand for water by the national economy (by more than half in the 1970's) increased the discharge of consumed water, of which about 50 percent was untreated sewage. Since almost two-thirds of the sewage was treated only mechanically, it is small wonder that the results of nonbiological treatment were unsatisfactory.

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[1] See "Environmental Protection and Water Management, 1979", Warsaw, 1980, Government Statistical Office, from which most of the statistical data in this article was taken.

A slow-down in consumption and a drop in discharge of pollutants can be stimulated, as examples from other countries show, by instruments of economic influence. This has been made possible by the 1974 law on water, which required that since 1976 payments must be made for water that is consumed for industrial purposes. The Water Management Fund is comprised from these payments. However, the already mentioned lack of building reconstruction capacity has meant that most of the money in this fund could not be properly utilized.

In recent years the financial outlays for investments in the field of water economy and water protection were alarmingly decreased. For example, they dropped from 18.3 billion zlotys in 1978 to 16.8 billion zlotys (in current prices) in 1979. There is a real danger that in a general economic recession it is precisely the investments in the field of environmental protection that will be most sharply restricted. From one year to the next, the funds from the Water Management Fund are not being utilized. In 1979, for example, only slightly under 57 percent of the available funds were used.

Air pollution control. Most of the atmospheric pollution in our country is caused by the industrial plants (about two-thirds). The assumptions of the environmental protection program in Poland to 1990 establish "absolute" requirements for installation of protection equipment in facilities released for use. However, lack of performance capacity, unsuitable fuel quality, the necessity for power shutoffs, which, unfortunately, apply first to protection equipment, are responsible for the fact that the results of air pollution reduction are unsatisfactory.

Industrial and heating plants which are especially harmful to atmospheric cleanliness, totaling 931 in number, during the 1970's emitted an average of 2.2-2.4 million tons per year of polluting dust. This amount did not fluctuate very much in the subsequent years. Yet the amount of emitted gas pollutants increased steadily. Although in 1973 the amount was 2.5 million tons, in 1975 it exceeded 3 million tons and in 1979 it came close to 5 million tons. The amount of pollutants trapped in reduction equipment, which in 1973 amounted to 21.8 million tons of dust and 0.7 million tons of gas pollutants, increased to 25.7 and 0.7 [as published] million tons, respectively. In 1979 the amount of trapped dust pollutants dropped (by 0.1 million tons) and the amount of gas pollutants dropped by 0.03 million tons, which was probably caused by shutting off the equipment for lack of power. In this way the degree of neutralization of dust pollutants increased from 91.4 percent in 1978 to 91.5 percent in 1979, and in relation to gas pollutants this index dropped from 13.5 to 12.2 percent of trapped emissions.

Reductions in allotments of investment funds for environmental-technical infrastructure affected air pollution control most strongly. While 2,834 million zlotys was expended for it in 1977, in 1978 the figure was 1,941 million zlotys, and in 1979 only 1,402 million zlotys. After inflationary trends in construction are taken into account, the dangerous drop in outlays will appear even more drastic.

Solid waste management. As of the end of 1979, the storage yards, dumps and cesspools contained over 846 million tons of solid wastes from the operations of industry, and in that year almost 24 million tons were added. In 1979, 165 millon tons of wastes were discharged, 94 million tons of which were used for purposes of the economy. The surface area of the dumps, storage yards, dumping grounds and sedimentation ponds, on which the solid wastes are collected, occupied 8,429 hectares, and in that year 214 hectares were reclaimed. Most of the accumulated solid wastes come from the operations of ministerial units: metallurgy (38.1 percent), mining (29.1 percent), construction and the constructions materials industry (13.3 percent).

Particularly troublesome, despite the lower volume, are the municipal wastes. At the end of 1979 there were 34.8 million cubic meters of these wastes on 1,225 public and permanent dumping grounds. These dumping grounds covered 2,267 hectares of land. Scarcely 1 percent of the total amount of the wastes was recovered by composting. Almost 40 percent of the municipal dumping grounds are in poor sanitary condition and, according to the State Sanitary Inspectorate, are a threat to the health of the community.

The threat and protection of the land surface and the soil. Of 31,268.3 thous. hectares surface area in our country, 61.3 percent is cropland, 28 percent is forests and woods, 2.6 percent is under water, 0.1 percent is mining land, 3 percent is transportation areas, 2.6 percent is community areas, and 2.4 percent is wasteland and remaining lands.

We see a steady decrease in Poland of cropland acreage. In comparison with 1946, about 1.3 million hectares have been turned over for nonagricultural purposes. Therefore, acreage per person has dropped from 0.85 hectares in 1946 to about 0.5 hectares now. To reduce this unavoidable phenomenon, a system of payments has been introduced for withdrawing land from agricultural and forestry use. Unfortunately, in the 6 years since the law on protecting and reclaiming land (1971) went into effect, it had not been possible to lessen the transfer of lands for nonagricultural and nonforestry purposes. For this reason, among others, charges were tripled starting in 1978, which caused, for example, a drop in surface lands withdrawn for nonagricultural and nonforestry purposes from 27,000 hectares in 1977 to 17,200 hectares in 1979 to occur. Most of these lands are low-quality soils and forest sites, which the highly differentiated level of payments (from 1.6 million zlotys down to 0 zlotys per 1 hectare--in the case of takeover of wasteland) favors.

The acreage of lands requiring reclamation (over 108,000 hectares in 1979), and the low level of their reclamation and development (28,600 and 24,800 hectares in 1979), is disturbing. Furthermore, the money from the fund for soil reclamation, which amounts to billions of zlotys, is not being used sufficiently. For example, in 1979, out of almost 4 billion zlotys of payments from procurement of agricultural and forest lands for nonagricultural and nonforest purposes, not quite 2.9 billion zlotys was paid out of the Land Protection and Reclamation Fund.

The threat to the forests. Industrialization of a country inevitably brings direct and indirect harm to a forest environment. The increase in Poland's forests by over 5 percent during 1974-1978, to a 27.5 percent level, is an obvious success. But this level is lower than the world average (by 1 percent) and the average in Europe (by 4 percent). Furthermore, our tree stands are relatively young and typically deformed. They are also unevenly distributed.

The country's forests, which in 1960 constituted 24.6 percent of its surface, increased to 27 percent in 1970 and 27.5 percent in 1979. This was due to the renewal and afforestation, which in the last several years amounted to an average 100,000 hectares each year. Despite the increase in the country's forest areas, we observe a worsening in the age structure of the tree stands. This is shown in Table 2.

Table 2.

(1) Lata	(2) Klasy wieku (w latach)							(3) Drzewostany o różnej strukturze wiekowej
	do 20	21 – 40	41 – 60	61 – 80	81 – 100	101 – 120	121 i więcej	
[illegible]	25,2	22,3	19,7	15,1	8,9	3,5	3,1	0,2
1977	21,9	21,5	21,8	16,2	10,2	3,4	1,9	—

Key:

1. Years
2. Age group (in years)
3. Tree stands of different age structure

Over 81 percent of the forest reserves are coniferous trees, dominated by pines (mainly the Scotch pine), which cover over 70 percent of the surface. Timber reserves now are (in large timber, gross) over 1 billion cubic meters and they increase each year by about 1 million cubic meters. Of this amount, in 1977 they comprised the following individual age groups, shown above, by percentage, respectively: 4.1[2], 13.1, 27.9, 26.3, 18.6, 6.5 and 3.5. The pine comprises 65 percent of the large timber reserves, and the coniferous timber is 67 percent of its combined standing reserves. Of the deciduous trees the beech predominates, covering 4 percent of the afforested area and 6 percent of the large timber resources. Harmful emissions of various pollutants into the air atmosphere are a threat to almost 400,000 hectares of forests, whose tree stands are exposed to weak damage (64.4 percent), average (29.1 percent) and heavy damage (6.5 percent). In comparison with 1971, the surface area of the threatened forests has increased by almost two-thirds. The forests are also subject to degradation due to "mining damage". In 1979 almost 30,000 hectares of forest land was subjected to this damage, mainly due to drainage of forest lands (25,600 hectares) caused by mining operations.

Each year billions of zlotys flow into the Forest Fund from surcharges on timber and damage caused by: forest fires, mining damage and withdrawal of land for nonforest purposes. In 1979 revenues amounted to 6,050 million zlotys. This year 5,329 million zlotys were used which was an exception to the practice of recent years when the use of funds from the Forest Fund was much greater than were the revenues.

Aside from timber production and environmental and protection functions, other economic activity is conducted in the forests--growing and hunting. Fruits, berries, forest herbs, wood resins, wild mushrooms, and tanbark are gathered and Christmas trees are grown. Wild game hunting produces considerable revenues, including foreign exchange. For example, in 1960, 1970 and 1979, animal kills amounted to (in thousands), respectively: deer, 9, 10.5 and 16.6; does, 19.6, 18.6 and 31.5; boars, 22.8, 24.4 and 82.4; hares, 390.6, 385.5 and 166.7. The maximum number of game animals shot was as follows (in thousands per year): deer, 16.6, in 1973; does, 67.2, in 1978; boars, 82.4, in 1979; hares, 563.3, in 1975; pheasants, 244.8, in 1975; and partridges, 869 in 1976.

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[2] Together with tree stands for cutting, among which trees up to 20 years dominate, however.

In 1979 there were 13 national parks in our country, a number that has remained unchanged since 1975. They occupied a surface area of almost 117,000 hectares. i.e., about 0.4 percent of the geographic surface. In addition, 735 preserves (scenic, animal, forest, peat, plant and flower, water, steppe, halophyte and inanimate nature) covered 72,500 hectares. There were 10,805 so-called monuments of nature, protected by law, on Polish land, i.e., over 6,000 more than in 1960.

In the last 20 years on the whole there was a large increase in the populations of the more important protected animals. Beavers, estimated at about 1,250 in 1979 (as against 217 in 1960) increased the most, as did our preserve specialty--bison, which now number 545 against a former 145. The number of chamois stayed at about the same level (150-200), but the bear population dropped alarmingly, to an almost relict number of about 20.

Social Movement for Environmental Protection

Not only the organs of state and economic administration involve themselves in environmental protection matters, they are also an object of interest and activity of many political and social organizations. The largest mass organization is the National Unity Front (FJN) which has been in existence since 1952. The FJN initiates various environmental protection actions. The campaign, initiated by the FJN in 1975, called "100 million trees and 60 million shrubs for the millenium of the Polish State," was well-known and fruitful. A Commission for Afforestation and Environmental Protection functions within the FJN. Under the auspices of the FJN, campaigns for afforestation and land reclamation mobilize the populations of the towns and villages to activities in behalf of environmental protection. The Independent Self-Governing Trade Unions "Solidarity" play a large role in environmental protection.

Many associations, such as the Sightseeing Tours Society and the League for the Preservation of Nature [LOP] (numbering almost 1.5 million members associated in over 13,000 circles), also involve themselves with environmental protection matters. In 1979, LOP members planted almost 8 million trees and shrubs, set out almost 1.7 million tons of food for animals and cared for thousands of hectares of green and afforested lands. As part of its operations, almost 14,000 lectures and 44,000 nature talks were given in the LOP.

The Polish Anglers' Union [PZW] has over 700,000 members. The Nature Preserving Guard [SOP] has 1,400 regional groups and 28,000 members and is a social army for environmental protection. It is assisted in its prevention-suppression activities by the Water Protection Fishermens Guard, which issued 36,000 citations in 1979.

The enormous numer of different types of organizations makes it possible to better protect the environment against vandals, poachers or people who do not have an awareness of the environment.

In generally describing the activities of social organizations in the field of environmental protection, the following types of problems should be distinguished:

--the conducting of awareness and popularization programs among their members for persons on the outside;

--the shaping of public opinion;

--the initiation of activities and actions for the good of the environment;

--the undertaking of measures to protect the environment (messages to the authorities);

--the coming out against acts of devastation of the environment; and

--the giving of active assistance to administrative and police organs in cases of transgressions doing harm to the environment.

The fact that environmental protection is somewhat by definition the goal of our political system, does not really settle the matter. Nor is it settled by incorporating this obligation into the Constitution, or into those commitments which promote this goal and which evolve from the most specific standardization acts.

Every country--Poland also--can defer an increase in the not-so-trivial, of course, outlays for environmental protection, in favor of an increase in economic growth which is expressed in an increase in the production of assets per capita. The only effect of such a deferral will be the deterioration of the quality of the environment, whose recovery in the future (it this is at all possible) will cost that much more. The prevention of environmental pollution (degradation) and the rehabilitation of the environment to restore biological balance, is technically possible, socially necessary, ecologically irrevocable, and economically profitable, although we are not yet able to precisely measure this profitability. Nevertheless, the problem of environmental protection and development must be given its proper rank. Life in a healthy and natural environment, which is pleasing to the eye and the ear, is a sine qua non condition for the proper understanding of the quality of life, something that, unfortunately, we too frequently forget under conditions of day in and day out shortages.

9295
CSO: 5000/3004

ENVIRONMENTAL PROBLEMS--PLAN VI DEFICIENCIES OUTLINED

Caracas RESUMEN in Spanish 25 Oct 81 p 25

[Article by Fernando Travieso:* "Decentralization: the Great Alternative," Article No 14, "Plan VI and the Environment."**]

> [Text] The Sixth National Plan, 1981-1985, makes no provision for effective decentralization or control measures that could redirect current trends of land occupation, and thus encourages repetition of existing patterns of land use and environmental degradation.

Environmental deterioration processes will intensify around Caracas, exerting influence directly on the Valles del Tuy and indirectly on Barlovento and the rest of the capital city area. This would lead to pollution of the atmosphere as well as of bodies of water, degradation of vegetation, increased risk of seismic and other geological disturbances in the various urban settlements, destruction of drainage basins, elimination of the buffer zone's ecological usefulness, and the occurrence of periodic floods in urban areas.

Given the magnitude of these impacts on the country's central region, and depending on the efficiency with which we apply macro-policies designed to mitigate such impacts and regulate patterns of land occupation (as for example in the Outline of Regulations for the North-Central Coastal Region, the Outline of Regulations for Caracas's Buffer Zone, and the Valles del Tuy Development Plan), we can expect to see a greater or lesser destabilization of environmental systems with regard to their ecological, hydrological and morphogenetic balances, with very immediate consequences for the inhabitants' health and quality of life.

Plan VI implies no substantial productivity changes in the different environmental components. That is, no provision is made to reverse present negative tendencies of devaluation, underutilization and mismanagement of environmental resources, or to change conditions now prevailing in the central region and the country at large.

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*Director of the study: "Alternatives for the City of Caracas in the year 2000."

**This article is based on the study "Alternatives for the City of Caracas in the Year 2000, Chapter IV: Environmental Model, CENDES, [Centro de Estudios del Desarrollo], UCV [Universidad Central de Venezuela], 1980;" and on the "Sixth National Plan, 1981-1985, Volume III: Regional Development."

Dedication of land and other agroecological factors to agricultural uses is drastically reduced, while land for urban development is indiscriminately increased in priority development areas. Many such areas, however, represent serious physical obstacles to urbanization (See Article 12: "The New Metropolises.")

Plan VI fails to attack the problem of water supply for the central region and the capital city area. It calls for continuing drainage of neighboring areas' water resources, and increases the need to preserve high-altitude watersheds and carry out costly transport systems (Orinoco, Guanare, etc.), with currently unforeseeable socioeconomic and ecological consequences.

In priority development areas where, according to Plan VI policy, it is feasible to increase urban and industrial growth substantially (Ciudad Guayana, Ciudad Bolivar, Maracaibo, Costa Oriental del Lago, Barquisimeto, Acarigua, Araure), future developments will accentuate problems of environment and use of natural resources in the priority areas' spheres of influence. In the remaining priority growth areas (San Cristobal, San Antonio, La Fria, Barcelona, Puerto La Cruz, Cumana), current tendencies toward deterioration and poor resource utilization can be expected to continue.

Since Plan VI does little to slow the expansion of industrial plant and equipment and growth of cities in the Lago de Valencia basin, and in spite of the existence of the Master Regulatory Plan, serious losses of environmental resiliency are sure to occur. These will include irreversible degradation of the Lago de Valencia and its entire related water system, removal of optimal quality soils from agricultural use, including irrigated land, and the spread of atmospheric pollution problems throughout the basin. Problems of water supply for urban uses in the country's central region will be similar to the capital city's problems.

A series of mutually intensifying effects will take place in the capital city area and the country's center, thus maximizing the total regional impact. Chaotic urbanization in the expansion zones for Caracas, Los Teques, Valles del Tuy, Guarenas, Guatire and Barlovento will affect interrelated environmental systems in the neighboring Valle de Caracas as a result of what we may call the dynamics of the capital area.

Increased density in Los Teques and La Panamericana will affect the morphogenetic and waterflow dynamics of the slope in the area where it makes contact with the Valle de Caracas. This will add to its flooding and landslide problems with new and more intense processes of environmental degradation.

Similar repercussions will affect the Valles del Tuy, completely incapacitating certain areas for urban development. Transformation of Caracas's buffer zone into an intensive recreational area for high-income groups will have similar, though somewhat less serious effects on the Valle de Caracas and the Valles del Tuy, given their place in the regional context. Urbanization of Guarenas-Guatire will be accompanied by increases in atmospheric pollution not only "in situ," but also in the Valle de Caracas itself, due to wind dynamics. Serious problems will occur with respect to the dynamics of the River Tuy, Barlovento and the metropolitan coastline due to the production, transmission and impact of water pollution, compounded by the effects of flooding.

The solution: decentralization and popular control of environmental policies.

9839
CSO: 5000/2020

WATER SHORTAGE EFFECT ON ECONOMIC DEVELOPMENT OUTLINED

Algeria Al-SHA'B in Arabic 13 Oct 81 p 3

[Article by Jamal Salihi: "The Problem of Agricultural Irrigation in Eastern Algeria; Competition Between the Industrial Sector and Household Consumption"]

[Text] The water shortage problem has become one of the stumbling blocks on the road to development and improvement of the standard of living of the citizens. The problem remains unsolved with regard to both drinking water and water allocated for agricultural irrigation and industrial plant consumption.

The lack of water in our country is not due to a lack of rainfall or insufficient supplies of ground water. It is due primarily to the failure to achieve rational use of rainwater including storage of sufficient quantities of water behind dams, the exploitation of groundwater through the drilling of wells, and the construction of pumping stations, not to mention the water lost by runoff into the ocean, evaporation, leakage through ground fissures, or waste from faucets.

This problem is most severe in the areas of the country where competition for this basic ingredient of life is fiercest among the following three uses: household consumption, consumption by the industrial sector, and irrigation in the agricultural sector.

Perhaps this situation applies most clearly to the eastern part of Algeria. A third of the country's population is concentrated in this area and industrial development is experiencing a strong boom there. Moreover, the area is a prime agricultural region.

This area receives a substantial share of the country's rainfall. The department of Annaba led the country in the number of rainfall days in 1979 with 122 days for a total of 881 mm of rain. This is more than all other departments in eastern Algeria combined. Perhaps this fact is what has placed Annaba in the forefront of the departments that are waging the battle of industrial development. Annaba possesses 48 economic units including 22 plants in the heavy industry sector.

In general, this area is experiencing a comparatively strong industrial boom. Industries centered in this region include numerous plants and installations of the iron and steel industry (el-Hadjar, Annaba), the petrochemical and refining industries (Skikda), the mechanical implements and tractor industry (Constantine), the bicycle and motorcycle industry (Guelma), the plastics industries (Setif), and the textile industries (Batna), as well as building material plants and conversion industries. All of these industries require large quantities of water in the course of their processing operations. As an example of this, while the Algerian citizen uses an average of 75 liters of water per day--a figure that is below international standard of water consumption, which is 300 liters per day--the production of 1 kilogram of steel requires 270 liters and the production of 1 kilogram of rayon requires 1,000 liters. However, the high concentration of large industrial projects which have won priority in past development plans has had a far-reaching impact on the agricultural sector both from the standpoint of the industrial projects' encroachment on arable lands and from the standpoint of the diversion of irrigation water to operate industrial plants. This has created an imbalance between the two sectors and has complicated their growth, which was to have been balanced and integrated. This situation has been aggravated by the sprawl of construction into fertile lands without proper attention to development preparation.

The fact is that the water shortage problem has not been brought on by the industrial sector so much as by the sector responsible for the completion of the dams scheduled in the development plans as well as the small and medium-sized irrigation projects. These projects could have stored significant quantities of both rainwater and groundwater. While it was inevitable that industry should ask to obtain the lion's share of the water at the expense of agriculture and household consumption, it should have been obligatory before every industrial project was set down in past plans--and this should be a lesson for us in the planning of industrial projects in the future--that hydraulic studies be conducted to pinpoint the water resources required by the project without recourse to competition with agriculture or household consumption for the same resource. Of course, we are not speaking here of the precedence which the project should obtain.

The area that we are discussing is a suitable area for the construction of dams because of its undulating terrain and the quantities of rainfall it receives in the winter. However, this matter does not depend solely on the suitability of natural and climatic conditions or on planning and the allocation of financial resources. The insurmountable obstacle lies in the weakness of the means of implementation. The level at which the large dams are being completed is very low and does not conform to the prescribed goals--especially in view of the competition for building materials and means of transport this sector is experiencing with the construction sector.

For these reasons, the least we can do is to encourage small and medium-sized irrigation units such as small dams, artesian wells, and pumping stations. The key advantage of these units is that their installation and operation can be controlled at the local level without exhorbitant costs, the use of high technologies, and with a considerable saving of time.

8591
CSO: 5000/5003

BRIEFS

OIL SLICK--Ras Al Khaimah (EN)--An oil slick Saturday spread in the coastal waters between Khor Al Rams and Hilailah village in Ras Al Khaimah, threatening the area with pollution. The slick is three kilometres in length and 200 metres wide. According to Sheikh Nassir Ibrahim Al-Qassimi, president of the Fishery Society, it developed from the oil discharged by vessels anchored off the coast. Sheikh Nassir warned that the marine life in the area is in danger of extinction. He called for urgent measures to protect the coastal area from pollution which he said poses a threat to the country's economy. [Text] [Abu Dhabi EMIRATES NEWS in English 23 Nov 81 p 2]

CSO: 5000/4703

DANGERS OF MOUNTING GARBAGE IN LUANDA STRESSED

Situation Described

Luanda JORNAL DE ANGOLA in Portuguese 21 Oct 81 p 2

[Article by Joaquim Ramos]

[Text] Greater Luanda, a city with over 1 million inhabitants, is now in danger of contracting diseases caused by the lack of sanitation evident everywhere. Garbage littering the streets, the entrances to buildings, garages and dwellings, broken pipes, clogged drains is the spectacle we encountered as we cross the city from one end to the other.

But unfortunately, it is now a question of a situation which is already spreading beyond the Luanda limits into other regions of the country as well. How long will a situation such as this continue to exist? Clean-up drives and garbage collections should be carried out periodically in order to avoid the spread of such diseases as cholera and other epidemics, because one of the results of the indiscriminate accumulation of garbage is the rapid breeding of cockroaches, fleas, flies, mosquitoes and rats, all of which are potential disease carriers.

Until a short time ago, there were areas where rats were rare, but which are now making their destructive activity felt, creating not only repulsive but even very dangerous conditions, for rodents constitute potential carriers of a significant number of diseases. A single bite from one of its parasites, especially a flea, the rat could cause infections or food poisoning and spread transmissible diseases, such as Murine-typhoid fever and bubonic plague.

If we carefully study the rat's activity from an economic viewpoint, what becomes most evident is the widespread ruin of foodstuffs and at times the serious damage done to electrical installations and pipe lines.

But on coming to grips with the garbage problem, we cannot overlook the particularly serious situation existing in suburban neighborhoods where the predicament appears to be considerably more critical because of the total lack of social substructures and where, in addition, the majority of the urban population live. Garbage in these areas is much more dangerously piled up and would require a more diligent clean-up and sanitation job.

Some residents who understand the situation are very careful about emptying their garbage into containers which, on the city's initiation, are already becoming commonplace. Many do not take into consideration that by allowing garbage to pile up haphazardly near their residential areas, they are exposing themselves to disease and to other dangers. As long as it is not possible to replace the rundown areas by clean neighborhoods with the necessary substructures, the inhabitants should take the necessary precautions to combat diseases which could result from garbage. It is not uncommon to see small garbage dumps near suburban residential areas and even next to markets where people buy their food supplies, they have become quite common; we believe that urgent measures will soon have to be taken to counteract this. Garbage is synonymous with disease.

Now with the fast approaching rainy season, Luanda will suddenly find itself saddled with another problem: the formation of pools where polluted water and breeding places for mosquitoes are also becoming centers of infection which can seriously jeopardize public health, although this is a difficult problem to solve under present circumstances. But what is of the utmost importance is to face all these problems seriously, and try to solve them the best and quickest way possible.

Inoperative Treatment Plant

Luanda JORNAL DE ANGOLA in Portuguese 28 Oct 81 p 2

[Text] Last year on 5 December the JORNAL DE ANGOLA announced that the garbage treatment plant located in the Kilamba Klaxi Bairro, and industrial unit constructed in the colonial period and which never became operative, would soon begin to operate.

As it is the only one of its kind in the People's Republic of Angola it is easy to see the economic importance of this garbage treatment plant which will make it possible to convert garbage from Luanda into fertilizer for agriculture, in addition to processing the separation of several kinds of scrap iron which can be put to good use in other industries.

Meanwhile, 10 months have gone by. This unit continues inoperative and apparently without any prospects of becoming operative, while in the meantime its substructure has been progressively deteriorating and the several installations converted into public toilets.

The area's inhabitants, in turn, have begun to break windows and pull up electrical cables for the most varied purposes.

The impression one gets from a visit to this plant, in which millions of contos from the public treasury have been invested is chocking and calls for the Ministry of Industry's demand for immediate attention from those in charge.

To give the reader a clearer idea of garbage treatment plant's importance we must point out that it is a question of a highly complex plant and the only one of its kind in Africa. There, after the garbage is collected, it is deposited in three large receptacles where the different kinds of residue are separated. Paper and plastic go to one side, the scrap iron to the other, etc.

The various types of garbage are later compressed into blocks and sent to their respective industries. The iron blocks are intended for the national iron and steel industry, the paper blocks for industries in this line of business and the fertilzers are naturally delivered to the Ministry of Agriculture.

The importance of this garbage treatment plant in the prevention of pollution should also be stressed.

To grasp fully the present condition of this unit, we recently went to talk to the person in charge of the Provincial Commissioner's Office in Luanda. He told us that they had already taken steps to prevent any greater destruction to the Kilambo Klaxi garbage treatment plant's substructure. On the other hand, they have also made contacts with foreign companies in this line of business with the view to the most immediate possible salvaging of this production unit. A group of technicians has already been with us to assess the working conditions, but have returned without having solved the problem.

On this subject, it is conceivable that the Kilamba Klaxi Bairro Committee may be able to exert a positive influence on the inhabitants by making them comprehend the economic importance of the plant in question, and helping them to realize the importance of their safeguarding these structures which are so necessary to the country.

8870
CSO: 5000/5614

ANGOLA

BRIEFS

COAL SHORTAGE CAUSES DEFORESTATION--Sometime ago I intended to write to this newspaper to report a certain number of conditions which I believe should be aired in the press, but only today am I taking this initiative. Indeed, the subject I wish to focus upon seems to me sufficiently relevant since it pertains to practices which concern all the Angolan people. I was born in Luanda 32 years ago and have lived here ever since. I have always been accustomed to looking upon our wonderful city's forest island as a garden of paradise where many families spend Sundays having picnics in the shade. But it now happens that the renowned Luanda forest island is about to disappear because many people living in the above-mentioned neighborhood, because of the lack of coal, have decided to cut down those trees for firewood. I believe that this is the wrong course of action because it jeopardizes the biological balance and flouts the laws protecting nature. The forest regions render a beneficial service for all. The shade of the trees in the Luanda forest island have already afforded welcome shade to many families who go there to spend Sunday on the beach and also provide many hours of relaxation if the people living in that Luanda region do not continue to destroy the forest, tree by tree. [Text] [Luanda JORNAL DE ANGOLA in Portuguese 28 Oct 81 p 2] 8870

CSO: 5000/5614

PRESIDENT REVEALS PLAN TO DEVELOP WATER RESOURCES

Gaborone DAILY NEWS in English 18 Nov 81 p 1

[Article by Johannes Pilane and David Matshediso]

[Text] **THE PRESIDENT, Dr Q.K.J. Masire has said the Government plans to spend P44 million on water development throughout the country. He was addressing a kgotla meeting at Letlhakeng in the Kweneng West on Saturday.**

He said that the water plan is contained in the 1979/85 National Development Plan and he expressed hope that it would improve the critical water situation in the country.

The President noted however, that as government keeps on developing the country, demands for more development prop up at a high rate. But he assured his audience that his government would do everything in its power to meet the demands.

He believed that such demands were inevitable in view of the increasing population. Botswana's population, according to recent census results, now stands at 936 600.

He said on top of that, some old boreholes were getting polluted and therefore abandoned. The abandoned ones also have to be replaced, hence there were extra funds involved.

In addition there are new villages mushrooming which also have to be supplied with water.

The President also called on the Kweneng Land Board and the Council to work jointly with the Bakwena, to speed up the implementation of the Tribal Grazing Land Policy, since the delay meant waiting for hiking costs of the farming inputs.

He said the policy was taken to improve farming in the country and called for old methods to give way to new ones.

He noted that other nations had applauded Botswana for its policy and any unnecessary delays would not be favoured by government. He urged the bodies to resolve disputes over farms.

The President praised Letlhakeng residents for their resolution to build a Junior Secondary School and said that such a resolution was in line with recommendations by the Education Commission which was appointed some years ago.

Earlier, the Chief's Representative called on government to improve the Letlhakeng-Molepolole road and to establish a Veterinary Vaccine storage.

The Member of Parliament for the area Mr E.G. Reokwaeng also said his constituents were aware of government efforts in development and did appreciate such developments but asked for more consultation by government officers.

Speaking at Manyana the President said money is the price of what has been done and without goods or services rendered notes are not effectively worthwhile.

The President recalled what he told Moshupa people about the shaky diamond markets and said with such financial instability our economic level was bound to be affected unless our alternative methods were effective.

In Moshupa, the President said the alternative method to alleviate or fill the gap was that Batswana must divert to agriculture production.

He reiterated that the financial strength of any country depends on its productivity and called on Batswana to produce more goods to attract flexible foreign exchange.

He said banks were just granaries keeping monies for depositors but the actual usefulness of money itself was productivity.

Addressing himself to Manyana people, he said government was worried about the state of roads in the area and that traffic had grown. He however added that government had employed experts to advise on what was to be done and how.

He said that the traffic density reflect a total of 160 vehicles a day between Thamaga and

Mosnupa. Between Thamaga and Boatle 140 a day and of Mogoditshane, Gabane and Kumakwane 220 a day.

Earlier the Chief Representative, Mr Marks Mosielele asked for increased powers of Chiefs in order to deal with the high rate of crime in the country.

A Village Development Committee (VDC) member, Mr J. Kruger called on government to reduce the P300 private water installation fee.

He also requested for a police station to be established at Manyana.

He told the President that Manyana residents were not happy because of the poor relationship between their councillor and the Chief Representative. He also called on for Self-Help Housing Agency (SHHA) to be introduced in rural areas.

Earlier on his arrival, Dr Masire was shown around the vegetable garden operated by the Kolobeng Cooperative Society. He commented that it was encouraging and applauded Manyana VDC to have taken heed of government's encouragement for self-reliance.

A former Councillor, Ezekiel Macha complained that telephonists in the telecommunications department often waste time discussing their private matters instead of attending to public calls.

In all his meetings, the President was accompanied by Mrs Masire, the Minister of Public Service and Information, Mr D.K. Kwelagobe and the Assistant Minister of Finance and Development Planning, Mr Lesedi Mothibamele.

CSO: 5000/5630

PRESIDENT TO RECEIVE BRIEFING ON DROUGHT

Gaborone DAILY NEWS in English 5 Nov 81 p 1

[Text] DELEGATES at BDP constituency congress held in Molepolole recently, have decided to send a four-man delegation to brief the President, Dr Quett Masire about what they referred to, in lengthy heated debates, as serious water situation.

The congress revealed that the village was hard hit by a serious shortage of water. At the Scottish Livingstone hospital, delegates said, patients had to go into the bush because there was no water in toilets, and thus, increasing health hazards in the village. Major institutions like the Kgari Sechele Secondary School and the Kweneng Rural Development Association were also said to have been badly affected.

The congress appealed to government to re-equip old boreholes, which were closed down because the water was said to be polluted. Delegates argued that the water in the impounded boreholes was far much better than the "highly polluted water that villagers were forced to drink from the Mokgopeetsane and Tshwaanyane rivers."

It was further pointed out that it was wrong, in the first place, to have closed down the old boreholes before clean and adequate water could be made available.

The water situation, delegates strongly pointed out, had slowed down self-help development activities. The congress expressed concern about the fact that the water problem was "a perrenial one that the Ministry of Mineral Resources and Water Affairs is aware of. The leadership of the party in the constituency has from time to time drawn the attention of the Ministry to this problem, but to no avail," delegates said.

Many speakers also wondered why, since the Water Affairs department always claim there is plenty of underground water in the area. BOPA

CSO: 5000/5630

BOTSWANA

INADEQUATE WATER SUPPLY IN TSWAPONG REPORTED

Gaborone DAILY NEWS in English 3 Nov 81 p 3

[Article by Monty Letshwiti]

[Text] INADEQUATE water supply. continues to be the main problem facing villages in the Tswapong area.

This was confirmed after a tour of Palapye and surrounding villages by the local Councillor, Mr Stanley Mabogo.

Mr Mabogo took a three-day trip to Matlhakola, Lecheng and Goo-Sekgweng to collect first-hand information after which he told BOPA that the situation was not as bad as some people had reported.

The councillor said that the water-reticulation programme in the village was at impressive record because water standpipes were already availabe in the various wards to save people from walking long distances to fetch water.

The need for the water standpipes distribution in a given area is usually determined by the size of the village, as well as council and government offices.

Government planners have always requested people to group together to form big settlements, so that a systematic distribution of National Development Projects could be implemented throughout the country.

At present, National Development Projects appear not to be running at the planned pace because of the scattered settlements in the country. This is compounded by transport problems and public unwillingness to leave their old villages and traditional lands.

Mr Mabogo appealed to all local authorities in the villages which have water development projects completed, to apply sanitory measures in order to avoid unnecessary transmissions and spread of infectious diseases. Medical facilities and transport to the nearest hospitals were very limited in the rural areas.

The councillor also cautioned villagers to look after boreholes and the pipes to avoid unnecessary council expenditures which could delay further development.

He warned that the work volume in the Council water maintanence units has also gone up and as such it took a long time for broken boreholes to be repaired.

Mr Mabogo noted that there was not enough underground water in the Tswapong area. He expressed concern that people and their livestock in the area sometimes went for many days without water because of borehole breakdowns.

This observation was indirectly supported last week by the (BPC) Chief Executive Officer, Mr Edward Bell when briefing Central District local authorities on preparations to build the national power plant in Palapye.

He said that water would be piped from Paje north of Serowe to be used in plant operations and for staff consumption. BOPA

CSO: 5000/5630

BRIEFS

BAKWENA WATER CRISIS--The President, Dr Q. K. J. Masire has assured Bakwena that the government would do its best to ease the problem of water shortage in Molepolole. A delegation had been sent to meet the President at Letlhakeng West to brief him about the water shortage in Molepolole. The delegation told Dr Masire that water shortage in the village had become a concern of every resident, and questioned the wisdom of closing some boreholes, which are said to be contaminated. They said the situation had created more health problems in the village because many people had to drink from rivers. It would be better to drink from the boreholes than the river, they argued. The delegation also wondered why it had taken too long to equip boreholes, feeding the village reservoir. Plans to equip the three high yielding boreholes to supply Molepolole were announced this week by the Director of Water Affairs, Mr Gulam Quraishi, who said his department is currently trying to raise funds to meet the cost of equiping the boreholes. On frequent breakdown of boreholes in Molepolole, Mr Quraishi said the boreholes were designed several years ago, and that the population had greatly increased. He said this requires boreholes to work at pick capacity all the time, thus causing frequent breakdowns, particularly in hot weather when water demand is high. The Water Affairs department has plans to drill new boreholes in major villages, and buy standby engines. BOPA [Text] [Gaborone DAILY NEWS in English 20 Nov 81 p 1]

TSHESEBE WATER SUPPLY--The North East District Council has strongly objected to a proposal made by the department of Town and Planning that Masunga be the future headquarters of the district. Instead they recommend that Tshesebe be the headquarters. Councillors argued that Tshesebe was a more suitable place. They said if there was inadequate water supply at Tshesebe, water could be pumped from Shashe Dam, which is more than 80 km away. Madabu dam in Zimbabwe was also suggested. Officials of the Town and Planning department told the councillors that three boreholes were recently drilled in Tshesebe, and two of them had dried up, and the third was giving a very low water yield. They also explained that Tshesebe was squeezed between freehold farms and that there would be no room for expansion. The official had then come to conclude that Masunga was a more suitable place. Tshesebe is about 55 km North of Francistown and Masunga is about 72 km north-west of Francistown. The proposal to change the district headquarters was made after the district council resolved that its offices be moved from Francistown. The North East District Council has been operating from Francistown ever since independence. [Text] [Gaborone DAILY NEWS in English 30 Nov 81 p 1]

LITTLE RAINFALL--Despite some showers in Gaborone, reports from the districts indicated that there has been very little rainfall, except in a few villages such as Ramotswa and Molepolole. Reports from Lobatse indicated that Ramotswa has enjoyed a drizzle for the past two days which started from Boatle crossroads, covering the village and as far as Otse near the Mogobane road along the Lobatse Gaborone road. There have been no reports about ploughing. An official in the Meteorological Department has meanwhile said that under the influence of a well marked high pressure system off the South East Coast of the sub continent, a deep incursion of moist air has been taking place over the country, and with the presence of an intense trough of low pressure over Namibia extending South Eastwards, fairly widespread rains or thunder-storms have occurred over the Southern and Western part of Ramotswa and scattered elsewhere. BOPA [Text] [Gaborone DAILY NEWS in English 24 Nov 81 p 3]

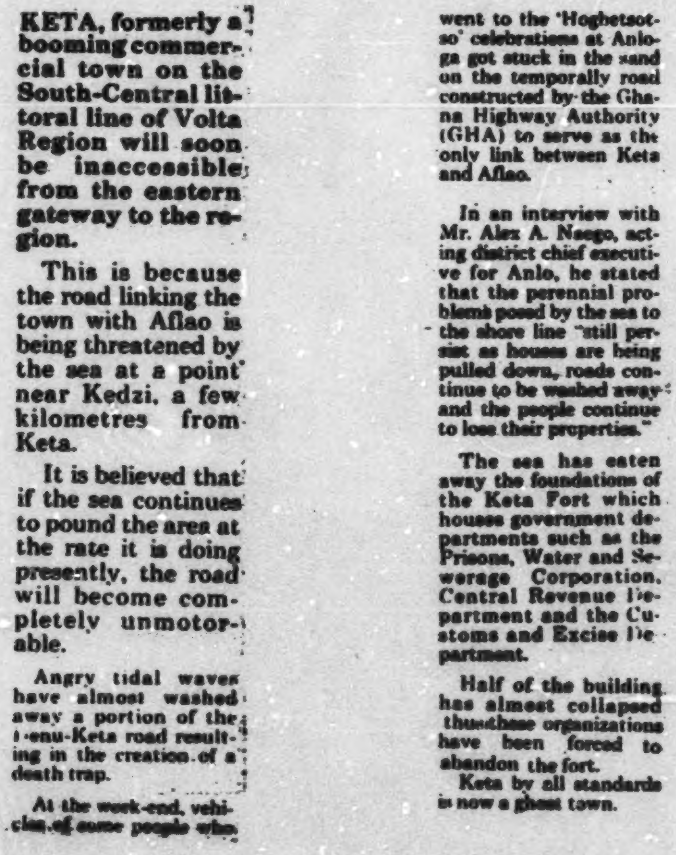
CSO: 5000/5630

CONTINUING SEA EROSION SEVERELY AFFECTS KETA

Accra DAILY GRAPHIC in English 10 Nov 81 p 1

[Article by Lee Accorley]

[Text]



KETA, formerly a booming commercial town on the South-Central littoral line of Volta Region will soon be inaccessible from the eastern gateway to the region.

This is because the road linking the town with Aflao is being threatened by the sea at a point near Kedzi, a few kilometres from Keta.

It is believed that if the sea continues to pound the area at the rate it is doing presently, the road will become completely unmotorable.

Angry tidal waves have almost washed away a portion of the Denu-Keta road resulting in the creation of a death trap.

At the week-end, vehicles of some people who went to the 'Hogbetsotso' celebrations at Anloga got stuck in the sand on the temporally road constructed by the Ghana Highway Authority (GHA) to serve as the only link between Keta and Aflao.

In an interview with Mr. Alex A. Naego, acting district chief executive for Anlo, he stated that the perennial problems posed by the sea to the shore line "still persist as houses are being pulled down, roads continue to be washed away and the people continue to lose their properties."

The sea has eaten away the foundations of the Keta Fort which houses government departments such as the Prisons, Water and Sewerage Corporation, Central Revenue Department and the Customs and Excise Department.

Half of the building has almost collapsed thus these organizations have been forced to abandon the fort.

Keta by all standards is now a ghost town.

CSO: 5000/5626

BRIEFS

WATER PROJECTS--The Minister of Water Energy and Mining, Morena Majara, was on Wednesday taken on a conducted tour of Maqalika Project, in Maseru and other places associated with it. He visited major components of the project which included Maqalika Dam, the extension of water treatment works and the new treated storage reservoir at the Hilton Hotel area. Mr J. Hendrich, Director of the project, told the Minister that the water treatment works had been extended to a total of three million gallons a day. Morena Matete said he appreciated progress and development made at the project and pointed out that he would like to acquaint himself with them. The initial feasibility report for augmentation of water supply to Maseru was prepared by the Swedish Consulting Group (SWECO) in 1976 which recommended that a raw water storage reservoir be formed in the Mejametalana donga to ensure continuity of water supplies during drought periods. Work at Maqalika Dam is progressing well and is scheduled to be completed mid next year. The project will cost M10.3 million of which Lesotho Government will contribute M4.8 million and the remainder will be provided by the African Development Bank as a loan. [Text] [Maseru LESOTHO WEEKLY in English 13 Nov 81 p 4]

CSO: 5000/5623

DANGER FROM INDISCRIMINATE USE OF PESTICIDES STRESSED

Colonialist-Caused Problem

Maputo NOTICIAS in Portuguese 11 Nov 81 p 8

[Article by Antonio Souto]

[Text] More than 10 highly toxic pesticides are being used throughout the country without the slightest provision for safety. Reports have come in of several cases of poisoning through absorption of the chemical products being used, some involving loss of life. Their continuous and intense use in an indiscriminate manner can, in the future, create serious ecological problems and place the public health in danger.

After seeing a considerable increase in the last 2 years of colonialism in the use of chemical products in agriculture with total disregard for control, we saw a significant drop in the import of such products immediately after independence.

The propaganda campaign unleashed by a number of multinational companies to place their products with our farmers was not in the least controlled. Particularly in the case of the innumerable collective cotton farms which, in the last years of colonialism, began to be cultivated on a large scale by the colonists, we saw many Mozambican workers lose their life for having inadvertently ingested lethal quantities of pesticides.

The recovery and development of the agricultural sector, particularly beginning in 1977, again saw an increase in the import of pesticides. Although the propaganda of the multinationals is no longer as intensive as it was, the increase in the use of pesticides is still not being strictly controlled, particularly at the level of large state farms where its application is being made on a large scale.

Many of the pesticides used in Mozambique and other underdeveloped countries are prohibited in the countries where they are produced, specifically in the United States and Western Europe. Not being able to place these chemical products in other markets, the multinationals which manufacture them put on a sales campaign to promote the use of these poisons in countries like ours.

"In Mozambique many farmers are influenced by the way in which propaganda was conducted during the last years of colonialism. Heads of state collective farms and other organizations assert that they have always used those products and, being familiar with them, will continue to do so," an expert connected with the distribution of these chemical products in our country told us.

We often hear the heads of certain agricultural units say that they will accept responsibility for the goals set for them only if they are guaranteed a certain chemical product and no other in its place. They say they cannot run the risk of not achieving those goals. Thus, needs arise which, ignoring the consequences of uncontrolled use, particularly of pesticides, perpetuate the effects of the commercial propaganda of the multinationals.

"There is a vast range of chemical products, especially pesticides, which can be replaced with others less dangerous," the same expert said and added that this, however, will require work by the National Institute of Agricultural Research to come up with a strict definition of which products to use and under what conditions. He also stressed that this work will have to be accompanied by the publishing of scientific information at various levels of the organizations which have the power to decide on the choice of the chemical products to be used.

Parathion, toxaphene, dieldrin, aldrein, DDVC (with the trade names of vapona, nogos and nuvan), paraquat and Z45T are, on the whole, products defined as very dangerous, and these have been utilized in agriculture without the necessary strict control.

The danger of these poisons stems from the fact that they can be ingested through the mouth of absorbed through the skin. Some of these can kill an adult with just a teaspoonful or less, as in the case of parathion when absorbed through the mouth. Others, although not having immediate toxic effects, accumulate in the body for a certain period of time and, at a given moment, exceed the maximum dose which can be tolerated by man, thus having serious consequences.

Dangers Pointed Out

Maputo NOTICIAS in Portuguese 12 Nov 81 p 3

[Article by Antonio Souto]

[Excerpts] A worker on an agricultural farm did not feel well and did not report for work. He stayed home. A few days later his fellow workers learned that he had died. The cause of his death was not known for certain at the time. No one remembered that on the previous evening he had gone to work in a place where highly toxic pesticides were being used. With his clothes sweaty from the efforts of his work he returned home. He felt ill and lay down without undressing.... Thus, he remained long enough for his skin to absorb the quantity necessary to kill him.

Stories of this type with variations one way or the other but giving as the principal cause of death the ingestion of poisonous chemical products are occurring constantly. But they are occurring particularly when an increase in the use of those chemical products is not accompanied by an increasingly strict control of those substances.

These days, some tens of thousands of hectares of land are treated with pesticides. At the end of this decade, hundreds of thousands of hectares will be so treated in the agricultural sector alone.

Many men, particularly workers on collective farms, now have small quantities of toxic substances in their bodies. Continuous contact with those products for some time, not necessarily 10 years, without strict countermeasures being taken, will raise the level of the poisons already absorbed until they exceed the maximum limits which can be tolerated by the human organism. Thus, obviously through prolonged intoxication or with the appearance of a disease with a somewhat common name, the person dies, truly poisoned.

Nowadays, we see in Cabo Delgado, in Gaza, in many localities of this enormous country, new irrigation methods and new agricultural processes. And we see the development of new technology necessary for the growth of our production. However, at times that development is harmful.

Where there was no drinking water, human effort has now constructed large ditches constituting a vast network through which millions of liters of water now circulate bringing water to thousands of hectares of crops.

Water has finally arrived! In the drainage or irrigation ditches children find the swimming pools they never dreamed of; women no longer walk 4 to 8 hours with a can on their head to wash clothes in the nearest creek and bring back the precious liquid lacking in their house; even the animals satisfy their thirst.

The only thing is--this water is poisoned.

Occasionally, people have heard in time that it is dangerous to use that water, but, since they have not been duly advised of the poisoning process, they do not believe it. Others have simply never heard of the poisoning.

The problem is that the persons responsible for the use of those chemical products have not yet accepted the fact that the products are dangerous. In their daily activity, they recognize them as pesticides, know that they are dangerous, take a few precautions, but.... The required control leaves much to be desired.

Certain Characteristics of the Poisons

In the case of parathion, one of the most potent poisons, it takes only a sniff to kill an adult; and this is being used in Gaza to combat the sparrow. Perhaps its use is absolutely necessary, but its danger is also too great. When the plane passes over flocks of sparrows, they drop by the thousands; some, however, have not been mortally affected and will die more slowly. Before this happens, however, boys with spears kill them and end up using them for food. Although it is not as effective as the terrible poison contained in parathion, some countries control the bird population on collective farms by using rotating mirror systems and other processes.

Vapona, nogos or nuvam kill a human being instantly as soon as the dosage exceeds 13 milligrams per kg of live weight when ingested by mouth or 75 milligrams when absorbed through the skin. In the case of an adult who weighs 70 kg, this means that if he ingests 0.91 gram by mouth or 5.25 grams through the skin, his death is almost certain.

Any of these products is apt to be used principally in vegetable gardens. The danger is especially for the workers who apply the pesticide because, after it is scattered on the field, 3 or 4 days are required for it to decompose and lose its toxic effects.

Paraquat is a herbicide we are using on tea. As it is applied everywhere on the soil, danger exists principally for the workers who handle the product. It takes only 2 to 3 grams to kill a person weighing 70 kg. Z45T is also very dangerous and, being a shrub killer, it is used in our country principally in pastures to control maqui.

8568
CSO: 5000/5621

HEAVY RAINS CAUSE EXTENSIVE DAMAGE

Victoria NATION in English 14 Nov 81 pp 1, 2

[Text] *THE break to the dry season occured devastatingly yesterday morning causing an estimated R 1 million worth of damages to farms, flooding of houses and disruption of communication in several parts of Mahé.*

Between midnight and 11.30 this morning, Bon Espoir alone recorded 257.5mm of rainfall — unusual at the start of the rainy season.

At the two farms belonging to the Seychelles Agricultural Development Corporation (SaDECO) at Anse aux Pins, crops of cabbages, chinese cabbages, cauliflowers, cucumbers, peppers and other vegetables were completely flooded.

Farm workers toiled in the rain to salvage whatever they could but SADECO's General Manager Mr. Maxime Delpech has estimated R. 500,000 worth of damage on the farms, as well as a loss of four months' supplies to the consumers. Mr. Delpech said another R. 100,000 would be required to prepare the land again for cultivation.

Plantations at the Grand Anse Research and Food Production Centre suffered the same fate and there have been damages to several other smaller farms, particularly in the Anse Boileau region where chicken coops were flooded and the birds drowned.

Communications between Victoria and South Mahé were disrupted for some time because of floodings all the way from Pointe Larue to the bus depot at Anse aux Pins SPTC buses from Victoria were forced to drop their passengers at the airport on one occasion.

Reports of damages to bridges were minor although at Anse Boileau, opposite the playing field, a 15-foot gap occurred in the road, blocking traffic in both directions. There were no immediately reported cases of damaged houses although a few boulders were dislodged and rolled downhill.

Upper Les Mamelles bridge was completely overflooded, but the new one on the main road stood firm. In February the original bridge collapsed when 215mm of rain fell in six hours.

Meanwhile the National Consultancy Services have announced that they have virtually completed their study on the structural stability of bridges around Mahé and would be submitting their recommendations soon for repairs on some of them.

As a measure of safety during this morning's downpour, several schools in South Mahé were closed. Air France's early morning flight could not land but flights to Praslin where little rain was reported, continued as normal.

The Meteorogical Station at Seychelles International Airport has blamed the sudden downpour on cyclone Bessie-Arnelle which, it said, was now moving away from Diego Garcia.

CSO: 5000/5627

UNEP EXPLORATORY MISSION STUDIES SEA RESOURCES, POLLUTION

Work Started

Victoria NATION in English 17 Nov 81 pp 1, 2

[Excerpt] *THE Seychelles Government yesterday morning invited the visiting exploratory mission of the United Nations Environmental Programme (UNEP) to use the Republic as its base in all its subsequent discussions which will culminate in a ministerial signing in 1983 of the Regional Sea Action Plan Convention that the delegation is preparing.*

Leading a team of four Ministers concerned with the protection of the coastal environment, Dr. Maxime Ferrari, the Minister for Planning and Development, who is also responsible for the environment, extended the invitation while launching a series of talks between UNEP and Seychellois scientists and technicians. Flanking Dr. Ferrari in the National House People's Assembly Hall were the Minister for Transport and Civil Aviation, Mr. Esme Jumeau, the Minister for Agriculture, Mr. Matthew Servina and the Minister for Health, Mr. Karl St. Ange.

In an eloquent speech reiterating Seychelles' preoccupation with the effective protection of its environment in the face of phenomenal development, Dr. Ferrari, pointed out that over 99 per cent of the Republic was made up of ocean on which the people depended for its staple diet.

The conservation of the marine environment was made even more dramatic and challenging, Minister Ferrari continued, by the possibility that in the foreseeable future Seychelles could discover hydro-carbons beneath its continental shelf in commercially exploitable quantities. If this happened, then the country's seemingly infinite capacity to devise technology appropriate for the harvesting of such riches had to be matched by an inexhaustible effort to prevent this discovery from destroying the priceless resources that the unspoilt ocean contained. Despite Seychelles' successes in protecting its wildlife and environment, the Minister cautioned, the country was acutely conscious of the need to avoid complacency. "All is not environmentally perfect in Seychelles." Dr. Ferrari said.

Already there was increasing concern that some of the rivers and streams were becoming polluted and that building development, especially around Victoria, was causing avoidable environmental damage. The Government was worried about the number of trees that were being felled; the monitoring of the use of pesticides had only just begun; the country had been struggling for some time to achieve an ecologically satisfactory method of disposing of domestic refuse and the pile of derelict motor vehicles so evident at the New Port was a continual reminder of the difficulty of reconciling technological progress with sound environmental management, he added. "Generally, our control of pollution is not as systematic as we would wish it to be," Dr. Ferrari stated.

It was because of these concerns, he explained, that the Government was now reviewing the land and marine conservation. It aimed to develop a comprehensive environment policy and practice which preserved the unique wildlife of Seychelles, controlled pollution and environmental damage, and ensured sustainable utilisation of resources.

The Government was currently reorganising the existing National Parks and Nature Conservancy Commission into a National Environment Commission under the auspices of his Ministry, Dr. Ferrari went on.

Expressing the hope that UNEP would be able to help Seychelles, the Minister noted that although the country had a well earned reputation for its wildlife reserves and conservation policies, it could not rest on past laurels. "We must prove that we are moving with the times and actually achieving the popular rhetoric of integrating development and conservation policies", he urged.

What Seychelles wanted to see come out of the UNEP-Seychelles Government talks was something specific, practical, to which the country, even as a small nation could contribute positively and from which it could benefit, the Minister said. "We believe that locked in as we are in our relationship with the sea, we in Seychelles have an experience that no other state in the region can offer, not even the other island states which have larger populations or more industrialised economics," Dr. Ferrari underlined.

Answering the Seychelles Minister for Planning and Development, the leader of the UNEP mission, Mr. Moncef Riahi of Tunisia, said that Seychelles was presenting them with much less to do than envisaged. Still, he continued, the mission and UNEP had to do something to protect the gems that the Seychelles islands were.

On the other hand, Mr. Riahi explained, UNEP, in its regional seas programme was aiming at the governments' concern in co-operating with each other, self-reliance being a key aspect.

Contingency Plans Examined

Victoria NATION in English 18 Nov 81 p 2

[Article by Ronnie Jumeau]

[Text] **THE United Nations Environmental Programme (UNEP) exploratory mission now in Seychelles is a major new sea programme, involving eight East African and Indian Ocean countries, launched in Nairobi in early October.**

The ambitious environmental project covers a vast coastal and marine area stretching from Somalia in the Horn of Africa to Mozambique in the south of the continent. It also includes Kenya and Tanzania on the East Africa coast and the islands of Madagascar. Mauritius, Seychelles and the Comoros.

Relatively little investigation of the resources and the environmental problems of the region has been carried out, so the fact-finding mission of seven scientists and experts is spending almost two months visiting all eight countries.

Among other things, they will report on oil pollution control, the conservation of coastal and marine resources and ecosystems, pollution levels and hazards to human health, marine and coastal area development, and pollution from industrial sources.

Their reports will serve as the principal working papers of a workshop of experts from the East African region which will probably be held early next spring and which Seychelles has offered to host.

ACTION PLAN

The workshop's conclusions and the mission's reports will be transformed into the first draft of an East African Action Plan, the final version of which is likely to be agreed on at an intergovernmental conference in 1983, also in Seychelles if the Republic's invitation to serve as the venue is accepted by UNEP.

To date, similar action plans have been adopted in five of the 10 seas in UNEP's Regional Seas Programme: the Mediterranean (1975), the Kuwait Region (1978), West and Central Africa (1981), the Caribbean (1981), and East Asia (1981). Three other regional action plans are expected to be approved in the next six months in the South-East Pacific, the Red Sea and Gulf of Aden, and in the South-West Pacific.

The fact-finding mission consists of a conservation expert, an industrial engineer, a land-use planner, a marine pollution expert, an oil pollution control expert, and a sanitary engineer. They were selected by seven international organisations, and are led by Moncef Riahi of UNEP's Regional Office for Africa.

SPECIFIC TASKS

Each of the experts has five or six specific tasks. The conservation expert, for example, must prepare an inventory of coastal and marine resources and assess their economic value according to their present and potential use. He will also identify species, habitats and ecosystems that may require special protection in order to maintain essential ecological processes and life-support systems, preserve genetic diversity, and ensure the sustainable use of living resources.

The industrial engineer is to prepare an inventory of present industrial activities in coastal areas, including the identification of land-based industrial sources of pollution discharging wastes directly or indirectly into coastal waters and estuaries. He must likewise propose national or regional projects for reducing industrial pollution which could be included in the action plan.

As for the land-use planner, his jobs include preparing an inventory of major coastal activities, such as ports, refineries, tourist establishments, and of national and possibly regional regulations governing national decision makers in coastal development. Another task is to make proposals, on a national and regional level, that could lead to improved land-use planning and management.

The marine pollution expert will assess the present level of marine pollution in the region's coastal areas, changes which may be ascribed to pollution, also identify the most sensitive components of species, habitats and processes in the coastal and marine environment that can be affected by pollution, and finally note and describe national laboratories and institutions engaged in studying marine pollution.

Looking into existing and planned national contingency plans to combat oil pollution in cases of emergency is one of the things the oil pollution control expert will do. He is also to prepare an inventory of the sources of oil pollution in marine and coastal areas, from on-shore and off-shore exploration and exploitation, from petro-chemical plants as well as from shipping, ports, etc.

The sanitary engineer will survey available sewage disposal practices, assess the present waste-load of coastal waters including estuaries, due to the direct discharge of municipal waste (sewage, sludges, solid water), or to their indirect discharges through rivers and agricultural run-off, or to atmospheric pollution.

If the mission accomplishes what it sets out to do between 5 October and 25 November, the East African governments will have an excellent picture of the resources and environmental problems of their coastal areas, and a clear idea of what to do about them.

CSO: 5000/5627

BRIEFS

FILTERS FOR SASOL 2--Brandt Engineering--a specialist in air pollution control--has successfully completed the installation of four sophisticated gas filtering systems at Sasol 2, which is designed to clean up the emissions generated by the furnaces and kilns in the catalyst preparation plant. The contract with the giant oil-from-coal complex was worth about R450 000 to Brandt-Engineering, and was executed by the company's dust control division. The system comprises three big and 12 small bag filter units, and three complex trombone cooling units. The bag filters are compartmentalised for easy maintenance and contain a total of nearly 3 000 individual Mikro-Pulsaire filter bags. The top removal concept used in all these filters make for easy removal and maintenance. According to Brandt Engineering, the filter system has the capacity to treat up to 212 000 cu m/h of contaminated gas and has been designed to reduce particulate emissions to less than 120 mgs/cu metre. [Text] [Johannesburg THE CITIZEN in English 18 Nov 81 p 21]

NATAL OIL DANGER AVERTED--Durban--The danger of oil polluting the beaches on the Natal South Coast at Amanzimtoti and Isipingo, receded yesterday when it looked as if an oil slick close inshore had been broken up. Two vessels were sent from Durban early on Saturday to combat the oil slick, at one time more than eight kilometers long and one kilometer wide, early on Saturday. The slick came from a leakage from an oil rigging buoy off Isipingo. Luckily there were no strong winds to blow the oil inshore although at one stage on Saturday it was only a few hundred metres away from the beach at Isipingo. Two vessels, belonging to a Durban chemical firm, sprayed the slick with foam right through Saturday and yesterday and by late yesterday there were signs that the slick had broken up and the danger of oil pollution on the beaches had been averted. Municipal authorities along the South Coast were particularly concerned about the situation with the holiday season about to begin next week. [Text] [Johannesburg THE CITIZEN in English 30 Nov 81 p 13]

CSO: 5000/5625

DETAILS ON REFORESTATION CAMPAIGN GIVEN

Salisbury THE HERALD in English 4 Dec 81 pp 12, 13, 16, 18

[Article by Bob Linden]

[Text]

HOW can Zimbabwe meet the challenge to its heritage and future prosperity posed by deforestation?

The answer must spring first from a political decision — a firm Government commitment to make conservation and re-forestation a national priority.

ON THIS and the facing page Herald reporter Rob Linden takes a look at the increasing importance of trees and the threat that is facing Zimbabwe if our green heritage is not conserved.

In Zimbabwe that political will, to halt and then reverse the decline in our national treasury of land, trees and vegetation is strong at all levels, from the Prime Minister, Mr Mugabe, down to district councils.

Mr Mugabe has committed the nation to conservation, citing the example of past civilisations which fell amid deserts created by thoughtless over-exploitation of the land.

He has set aside the first Saturday in December every year as National Tree Day, urging every Zimbabwean, by personal example, to plant at least one tree at this time.

The energetic and dedicated Minister of Natural Resources and Water Development, Senator Joseph Msika, is implementing a series of legislative measures designed to protect our natural woodland.

At the same time his ministry, through the Natural Resources Board, is pursuing every possible avenue to educate and inform the people of our country's conservation needs.

The board works closely with the Ministry of Education and Culture in providing material, encouragement and assistance to schools to both teach conservation and help pupils undertake practical projects.

The Minister of Industry and Energy Development, Dr Simba Makoni, has pledged greater efforts and increased investment in developing wood as a fuel resource, while promoting alternative energy resources such as hydroelectricity, coal, solar energy and biogas.

ONLY ANSWER

While country-wide electrification, together with the use of "home-made" gas and energy from the sun, may provide the ultimate solution to the fuel crisis, growing more trees is the only practical short-term way forward.

"With an average per capita income in the communal lands of only $30 a year, it is unthinkable for people to have to pay for fuel, building materials or water," says Mr Brian Fuller of the Forestry Commission.

"We could try enclosing the remaining indigenous forest and managing it on a sustained-yield basis, but although that should form part of the solution, it will not be enough.

"The productivity of such woodland is only 5 or 10 percent of exotic trees such as eucalypti (gum trees)."

Such gum trees must be planted now, and in vast numbers, in communal lots or on individual holdings all over the country.

While a $21 million World Bank-funded scheme on this basis is likely to be agreed soon and implemented by the Forestry Commission over the next three years, it will still provide only a small part of our future needs.

The best way forward, the Government believes, is to involve every Zimbabwean organisation and individual — adults and children — in planting, tending and caring for trees.

And that is the vital meaning of National Tree Day tomorrow.

Zimbabwe To Become a Desert in 30 Years?

ZIMBABWE is facing the most serious fuel crisis in the history of human settlement in this part of Africa. We are not running short of electricity, coal or oil — the situation is far more critical than that.

Wood — the main fuel and building material of almost 90 percent of our people — is running out.

The crisis has grave ramifications, threatening the future productivity of the land itself, which is our lifeblood.

For a thousand years and more the people of Zimbabwe were able to live in harmony with the land and its forests. They cleared an area for cultivation and grazing, farmed it for some years, and then moved on, allowing the natural vegetation to regenerate and the land to recover its fertility.

Custom rigidly defined which trees could be cut for firewood and poles, and which must be respected as providers of fruit, food and medicines.

Many kinds of tree were regarded as sacred, and played an important religious role.

But now over a vast area — mainly the former tribal trust lands — pressure resulting largely from the unjust land distribution of the past has led to the land being denuded of the woods which once covered it.

An expanding population, rigidly confined within strict boundaries to areas of mainly poor soil, has been forced to clear every available metre of land for cultivation, and cut down all trees, even sacred ones, in a desperate search for firewood.

SHRINKING

Over 15 years, from 1963 to 1978, the wooded area in the communal lands decreased from 60 percent to 30 percent — and the latest indications are that deforestation is accelerating.

It is estimated that about 75 000 ha of woodland are being felled in the communal areas every year.

And the problem is not confined only to the former tribal trust lands. Much commercial farmland, State land and even parts of our national parks are slowly but inexorably being shorn of tree cover.

In his study, Deforestation in Zimbabwe, Mr J. R. Whitlow of the University of Zimbabwe's Geography Department lists the following districts as worst affected:

Communal lands: Darwin, Rushinga, Mudzi, Mtoko, Buhera, Gutu, Ndanga, Insiza, Bulalima-Mangwe, Nyamandhlovu, Nkai, Gokwe and Urungwe. In Mtoko, Gokwe, and Buhera, woodland areas were decreasing by up to 19 percent a year.

Commercial farming and general lands: Lomagundi, Makoni, Umtali, Chiredzi, Nuanetsi, Gwanda and Selukwe.

National parks: Extensive woodland areas have been destroyed, much of it by elephants, in the west and north-west.

Apart from the immediate effect of this depletion on the rural majority, as they are forced to spend more and more time and energy in an increasingly far-flung search for wood, the very land itself is endangered.

EROSION

Without woodland to protect, shelter, bind and improve the soil, especially along the banks of watercourses, it rapidly becomes degraded and easily subject to sheet and gully erosion.

Such erosion has already reached a crisis point throughout the vast and densely populated Sabi River catchment region, with millions of tonnes of precious topsoil carried away each year.

The resulting silting promotes flooding: the Sabi burst its banks both in Zimbabwe and downstream in Mozambique last rainy season. It also endangers present and future irrigation projects, on which the Government is pinning much of its hopes for rural development.

This crisis is not confined to the mighty Sabi and the rivers and streams which feed it: dams throughout the country are filling with silt. Many are now only a few centimetres deep in the dry season.

Mr H. A. Elwell, senior research engineer with the Department of Research and Specialist Services, has warned that in some cultivated areas up to 50 tonnes of soil is being lost from each hectare every year.

As our soil averages only a metre deep across the country, the danger is glaring.

Mr Elwell quoted a 1974 study estimating that even then the crop potential of 12 percent of commercial farmland had suffered moderate to severe damage, while half the subsistence farming area had undergone irreversible damage.

Unless nationwide action was taken now, he added, half of Zimbabwe could become unproductive desert in 30 to 50 years.

A chilling example of how quickly land abuse can take effect comes from the Bumi-Lupane region of Matabeleland where the Bubi River is fed by the Matateni natural "sponge".

This area, surrounded by forest, soaks up water rapidly during the rains and then releases it in a steady flow.

But this winter the Natural Resources Board reports, the Bubi dried up for a distance of 19 km for the first time in living memory and after one of the wettest summers on record.

The reason? Illegal clearing and streambank cultivation (the sponge is on State forest land) over a period of just three years. And only a handful of people, occupying less than 25 huts, was involved.

"A great deal of blame must fall on previous State policy," says Mr Brian Fuller, the Forestry Commission's education and publicity officer.

LAND HUNGER

"If land had been more fairly distributed much of the desperate land hunger of today and the resulting hostility to conservation measures could have been avoided.

"The pressure on our indigenous woodland would not be so acute, and we would have had more time to devise solutions and put them into effect.

"But now we are at crisis point."

In many areas people were burning dung and crop residues, which apart from being needed to improve the soil, were poor fuel.

Another study has shown that in some of the crisis areas not even fruit trees such as mangoes were being preserved, so dire had become the need for firewood.

Wood is also the main fuel for the poor of the town, who buy most of their supply from dealers. Here the increasing shortage has led to tree-felling around cities and towns and abuses by some commercial dealers of State and private forest land, and of woods in the communal lands as well.

It is estimated that of the average of over 6 million cubic metres of wood consumed in Zimbabwe every year, five million are used for fuel.

Our natural woods and forests, upon which the main burden of supplying this quantity falls, just cannot regenerate quickly enough to match increasing requirements and survive.

Again, past shortsightedness has contributed to the present crisis.

As Mr J. C. Johnston, of the Department of Energy Resources, points out: "In official circles wood fuel has been neglected as an energy source for too long."

He noted that in 1978 annual investments in energy from electricity, coal and liquid fuels, used by 2,9 million people, was $216 million.

Investment in wood fuel, used by 6 million people, with over 5 million entirely dependent on it for cooking and warmth, was just $1 million.

WORLDWIDE

The problem is not confined to Zimbabwe. Worldwide, and especially in developing countries, over 90 million people are now acutely short of firewood, with no other fuel available, according to a United Nations Food and Agriculture Organisation report.

A further 800 million are cutting trees faster than they can be renewed.

By the year 2000, the report predicted, there would be a world energy and environment crisis of alarming proportions. About 140 million rural people would be virtually without fuel, while over 2 billion would be clearing woodland faster than it could recover.

In Africa, the continent with the smallest proportion of forest — just 6 percent — the threat is even starker.

The need of expanding populations for more farmland, greedy and irresponsible commercial logging and the ever-growing need for firewood and building materials, mean that Africa is losing about 2 million ha of woodland a year.

The outlook seems grim. In Zimbabwe at least, the battle has not been lost and can still be won. But a national effort is required, people and Government working together, if we are to ensure that Zimbabwe remains a green and fruitful land.

[Photo caption] This Kopje was once covered with lovely msasa trees. Now illegal woodcutters have stripped every tree off the hillside]

Schools Unite To Arrest Soil Erosion

THREE Hartley schools this weekend join their efforts when they plant the first of an estimated 50 000 trees aimed at halting continued erosion of the Umfuli River's south bank in the area.

Pupils from Pfupajena, St Francis and Chegutu primary schools will plant the gum trees, donated by farmers in the area, on the river's bank tomorrow.

Although the occasion falls on the National Tree Planting Day that is purely coincidental. There is an urgent need to do something about halting the alarming rate at which the south bank is losing its vegetation and soils, as well as provide future fuel resources for the town.

Residents of Hartley in search of fuel resources, have cut down all the vegetation on the south bank. Today the south bank provides a startling comparison to the thickly forested north bank — the commercial farming land.

A conservation official, Mr Christopher Edwards, said a decision had been taken to interest the pupils, because they were likely to care for the plants better than adults.

The exercise, he said, would also help to assist the pupils in making them more aware of the need to preserve vegetation and soils.

Hartley town engineer, Mr Isaac Delport, said although the gums would take longer to mature than in other areas, they still had the advantage of developing off-shoots after being cut.

On Tuesday morning, some of the pupils accompanied by Mr Washington Dube, who is actively involved in the scheme visited the denuded area.

The response, from the pupils, to the scheme to do something about the bank had been enthusiastic, Mr Delport said.

"This is definitely going to be a school project. It is a continuous exercise because as more trees and plants become available they will be grown on the south bank."

Essential Crop

FOUR people living in a forest area near Lupane were fined recently for cutting down trees illegally, and were ordered by the magistrate to plant twice as many trees as they cut down.

This was an unusual but apt punishment which well illustrates the value of trees to Zimbabwe. The country is losing vast numbers of trees which the annual National Tree Day ceremonies can do much to overcome.

Apart from increasing the numbers of trees, the planting ceremonies should bring home to the people the vital necessity of replacing the wood that is used, legitimately or illegally. It should become the aim of everyone who uses wood to replace that amount at least by being responsible for giving root to a new tree.

CSO: 5000/5628

LAKE BALKHASH'S WATER LEVEL DROP CAUSES CONCERN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 20 Nov 81 p 4

[Article by M. Sirotkin, engineer and hydrologist: "Once More about Balkhash"]

[Text] Lake Balkhash is a unique reservoir and it is no accident that scientists, journalists, economists and the public are interested in it. However, there is a certain fraction of concern in the discussions about Balkhash more often these days. It has to be admitted that this concern is quite justified. In the last 11 years, since the Kapchagay reservoir was filled, the level of the lake has dropped by more than 1.5 meters and its area and volume have diminished. But in addition to the visible changes, the constantly growing mineralization of the water, especially in its eastern section conceals a great danger. It is impossible in this respect to ignore the sad example of the Aral Sea. We are not concerned with an ordinary reservoir, but one of the largest in Kazakhstan. Its role in the national economy is difficult to overestimate. With a further drop in the Balkhash level, its mineralization is accelerated even more. If one takes into account that the permissible salt concentration in water for technical needs is no more than 3 g per liter (and it is now often close to this figure), it becomes evident that the use of the Balkhash water in the near future will cause definite difficulties.

If we look at the "Plan for the Comprehensive Use and Protection of Water and Land Resources of the Ili River and Lake Balkhash (First Stage)," we see that in the next five-year plan, the rates of development of irrigated lands in the Balkhash basin will increase. Water consumption from the surface sources should be over 5.2 cubic kilometers already in 1985 versus 3.7 in 1970. One should therefore expect a further drop in the water level in the lake. The question of the future of Balkhash itself is consequently raised, in particular, its fishing potentialities.

Natural basins and reservoirs are currently responsible for up to 96% of all the fish caught in Kazakhstan, including about one-third from Balkhash. How may the conducted and planned water management measures in the basin affect the fishing industry? What will the lake be like in the near and distant future? There are many predictions and often they are contradictory, but neverthless come down to one thing: a further decrease in the lake level is expected, and already in the very near future it will be lower than the 341-meter mark with average mineralization in the western part of about 2 g of salt per liter.

For those who are closely acquainted with the situation in the Balkhash basin it is quite clear that it is impossible to preserve the lake in its current state or one close to it. This follows from the prediction calculations and the more convincing documents such as the mentioned "Plan" and the "Supplemental Studies" to it. It is unreal to count on a growth in water influx into the Balkhash basin from the outside in the visible future.

Taking into consideration the great importance that the western part of the lake has for the national economy, it is expedient to maintain its current dimensions, and even somewhat larger in the future. This requires the construction of an overflow dam in the Uzun-Aral strait. The expediency of building a dam at this stage is substantiated in the "Supplemental Studies." The purpose of this measure is to maintain permissible mineralization of the water in West Balkhash both for drinking and technical water supply since all the large population areas and enterprises are located in this region. Despite the fact that the fishing industry in this case loses over 7 km^2 of water table and, for a certain time, about 30% of the total fish catch, this version as compared to others is the most applicable in this case, the more so since according to the calculations of the institute "Kazgidroproyekt" which stipulate the construction of the mentioned dam, mineralization of water in the western part of the lake will drop. It will only be about a gram of salt per liter of water by the year 2000, while the lake level and the sizes of the catch will rise from 7,500 tons in 1980 to 14,500 in the year 2000.

There are other versions for the development of Balkhash. Some of them suggest immediate creation of several dams in different parts of the lake. Others do not envisage any reconstructions. Without going into them in detail, it should be stressed that only with creation of a dam in the Uzun-Aral strait is the development of the fishing industry not limited by the conditions of the fish habitat and is the most possible. The position of the fishing industry is indefinite in other versions, from fairly optimistic to very low catch volumes.

One can recall in this respect a similar situation in the Aral Sea. In only 4 years (1975-1978) the catches dropped from 5,730 to 300 T. The fish habitat changed to the critical value, and this resulted in their migration to the southern part of the sea where demineralization is still occurring because of river water.

It should not be thought that the process of salinization in Balkhash will occur by other means. There is only a possible difference in the intensity of the process. The hydrogeologists, for example, suggest that further drop in the Balkhash level may accelerate its salinization because of the rise in underground chemical run-off.

It is therefore thought that with the existing situation where the volume of water consumption in the lake basin is rising while the fishing industry is bearing the cost because of a drop in its level, the best method of solving the Balkhash problem is to build a dam in the Uzun-Aral strait.

9035
CSO: 1830/130

NEW KAZAKH AGENCY MONITORS AIR POLLUTION

[Editorial Report] Alma-Ata SOTSIALISTIK QAZAQSTAN in Kazakh 13 August 1981 carries on page 4 a 1,600 word interview under the regular rubric "Man and Nature" with S. Duysenov, head of the KaSSR Administration for Hydro-Meteorology and Environmental Control, by A. Sanbayev. In the interview Duysenov discusses the history of his organization, which began in 1979, as well as current operations, which primarily involve air pollution monitoring. He also discusses in detail the points and laboratories established to monitor air in the republic during the last five-year plan, efforts being made to control pollution at the factories and educate factory managers, the implementation of the decision to clean up Alma-Ata's air, problems caused by leaking gas installations in residential areas and plans for the future. It is evident from Duysenov's answers that air pollution control lags substantially in the KaSSR as compared to large RSFSR cities. Despite, for example, the decision, made some 5 years ago, to clean up Alma-Ata's air, the automatic monitoring station that was to be the focus of activities in this area has still not been installed.

9857
CSO: 1832/1015

BRIEFS

NORTH SEA FLOOR CLEANUP—The government is proposing that four million kronor be used for cleaning of the North Sea floor next year. In 1980, 10 million kronor was granted for a test project for cleaning up of the sea floor, and this year funds have been appropriated for surveying of the natural floor conditions and obstacles in important areas of the North Sea. During the test project, 250 tons of trash were taken up. The trash cleaning-up next year will proceed with fishing vessels using trawls or chains with grapnels. It is thought that the trawling work will take from 3-3 1/2 months. By the end of this period, it is assumed that two, or perhaps three blocks will have been cleared. The Oil Directorate will be responsible for the project. [Text] [Oslo AFTENPOSTEN in Norwegian 20 Nov 81 p 8]

CSO: 5000/2027

END